MobiliseYourCity

# Global Monitor

2022

Mobilise Your City

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## Donors

European Commission

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

AFD Agence Française de Développement

FFEM

Ministère de la Transition Écologique

## Implementing partners

AFD Agence Française de Développement

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

ADEME Agence de la Transition Écologique

Cerema

Codatu

European Bank for Reconstruction and Development

KFW

Wuppertal Institut

## Knowledge and Network partners

ECF European Cyclists' Federation

Global Partnership for Informal Transportation

ITDP Institute for Transportation & Development Policy

PLATFORMA Local & Regional International Action

UCLG United Cities and Local Governments

UN-HABITAT For a Better Urban Future

## Part of:

Marrakech Partnership | Global Climate Action

Sustainable mobility for all

# Foreword

Dear MobiliseYourCity Partners and friends,

When the COVID-19 pandemic started in 2020 no one could have guessed how long it would last or how fundamentally it would impact the daily lives of so many billions of people. This pernicious spreading of the Coronavirus across the world reminded us that we live in a world where many problems know no borders.

To address these issues that spill across national boundaries, it is increasingly evident that partnerships and collaborative actions between countries are the way to go. This underscores the importance of SDG17 'Partnerships for the goals', which reminds us that the Global Goals can only be met if we work together.

Nevertheless, national and sub-national governance structures are often where decisions are made. They are the ones with the authority and autonomy to take action. As a Partnership we are glad to work first hand with those actors across multiple levels of government to create change.

As a leading global Partnership for sustainable mobility with nearly 100 partners, including 65 cities and 15 countries, across Latin America, Africa, Asia and Eastern Europe, the MobiliseYourCity Partnership has been demonstrating for over five years now, the impact we can have when bringing together partners who build on each other's strengths to empower cities.

To make the most of our partnerships, it is essential to continuously learn from practice. For that reason, MobiliseYourCity has been acting more and more as a knowledge hub. We were, for instance, able to use funds from the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection to scale up a training made in Medan in the context of a technical assistance financed by AFD, thereby making it accessible to over 20 cities.

This report, based on a two-month long data collection, is always an exciting and insightful opportunity for us to take stock of the impact of our work and draw lessons from our projects throughout the world. We're immensely grateful to all our colleagues around the world who took the time to complete this work with us, which is resulting in increasingly rich and nuanced data. One result of this is that we can present even more quantitative results of our work through graphs and figures throughout the report.

Although accessing reliable data remains a challenging exercise, we continue improving the quality and precision of the result we are able to share here.

More than ever, we want to use the opportunity of this report to highlight the fantastic work done by our partners throughout the world. Strengthening their ties continuously, they keep improving the quality of their services to our members. Their commitment, like ours, is greater than ever, to enable ambitious action in cities and countries across the world to transition to sustainable mobility.

We hope you enjoy reading the report and look forward to our continued collaboration to help shape the future we want.

## Sasank Vemuri

*Coordinator of the MobiliseYourCity Partnership*

**This report is an exciting and insightful opportunity for us to take stock of the impact of our work and draw lessons from our projects throughout the world.**

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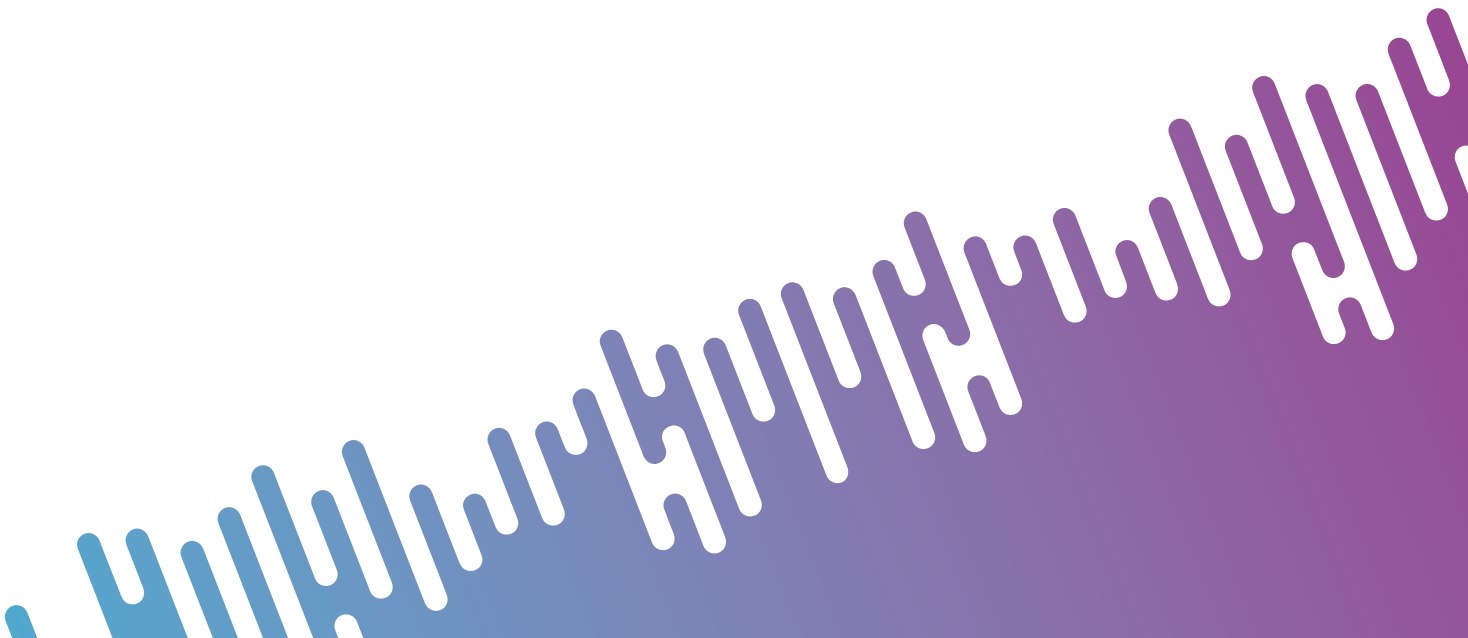


# List of figures

# Executive summary

## A global Partnership leading on sustainable urban mobility

Only six years after being launched at COP21 in Paris in 2015, the MobiliseYourCity Partnership has established itself as the leading global Partnership of nearly 100 partners for sustainable urban mobility planning, policy development, and increasing investment for sustainable transport in developing and emerging economies.

The MobiliseYourCity contributing partners have mobilised 40 million euros in grant financing to support our member cities and countries in advancing sustainable urban mobility. Our main implementing partners Agence Française de Développement (AFD) is supporting 24 SUMPs and 3 NUMPs and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is supporting 8 SUMPs and 7 NUMPs (including 3 NUMPs and 2 SUMPs in non-member countries and cities). CODATU, Cerema, ADEME and the Wuppertal Institute are also supporting cities in capacity building activities and pilot projects.

Thanks to the collaborative efforts of all our partners, we have already achieved results in each of our service areas. These results are presented throughout this report and are directly in line with the expectations set during the Partnership planning phase.

**The MobiliseYourCity Partnership works globally to generate knowledge, scale solutions and mobilise financial resources for sustainable mobility. Our partnership supports member cities and countries through four main service areas:**

- Sustainable mobility planning and project preparation
- Capacity building
- Advocacy
- Implementation support

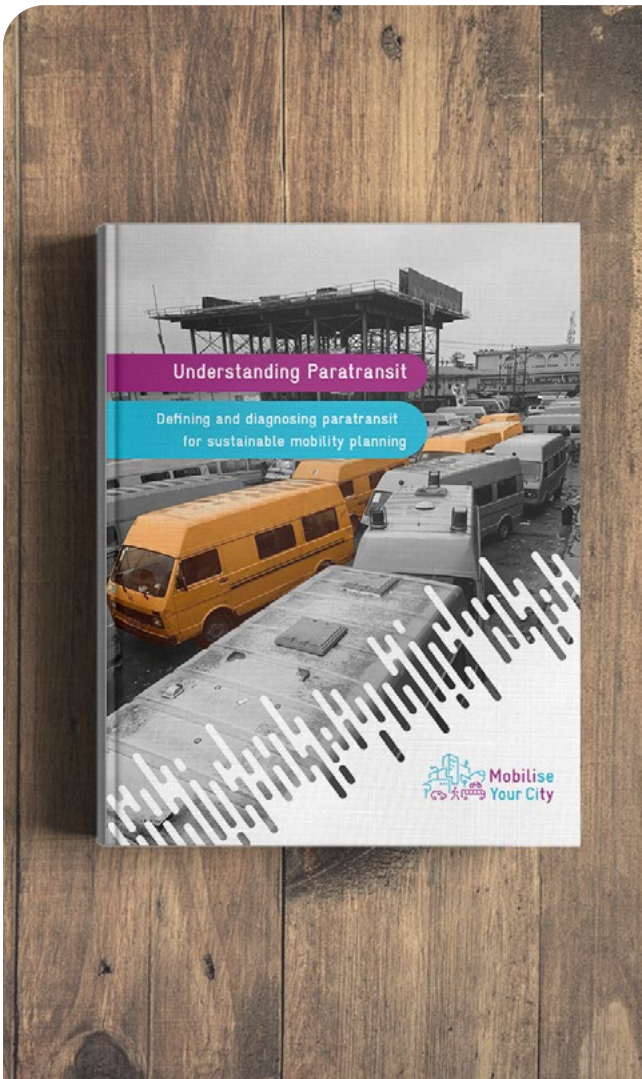
# Mastering Mobility: Capacity building and methodologies

**MobiliseYourCity equips practitioners with tested and scalable solutions. Together with our partners, we develop tailored methodologies and tools as well as deliver trainings on our focus areas (SUMPs, NUMPs, MRV).**

## HIGHLIGHTS FROM 2021

- **With five new publications, our methodological support is evolving together with the needs of our partners**. The new additions focused on the topics of paratransit and e-mobility. They complemented our methodological offer along the four different stages of the SUMP cycle, filling in particular the gap for measures planning.
- **With more than 350 products that have been collectively viewed over 300,000 times, our Knowledge Platform has established itself as the international knowledge hub on sustainable mobility planning.** In 2021 alone, we added over 120 knowledge products, with our highlight being the Paratransit Toolkit with up to 1000 views.
- **Together with our Knowledge and Network Partners and pioneering cities we conducted 20 Mastering Mobility training sessions in three languages.** Through these 20 sessions we helped equip over 1,000 mobility practitioners with practical skills.
- After several Latin American cities adopted their SUMPs, **EUROCLIMA+ Community of Practice was able to share lessons learnt and inspire new cities to engage in such a process**.

**Our methodological support is evolving together with the needs of our partners, with an added focus on paratransit and e-mobility to complement our methodological offer.**



# Mobility planning: supporting SUMPs and NUMPs

Our Implementing Partners, particularly the Agence Française de Développement (AFD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), are working with 45 local governments and 11 national governments in 39 countries around the world to prepare implementation-ready mobility plans and finance-ready projects. In addition to supporting planning and project preparation, the Partnership is also supporting 10 cities with designing and implementing a diverse set of pilot projects, from introducing low speed zones around schools to setting up shared e-bicycles schemes.

## KEY TAKEAWAYS FROM 2021

- SUMPs and NUMPs preparation have helped **mobilize more than 1.2 billion euros**.
- By considering all modes of transport, **SUMPs and NUMPs have mobilised 25 million euros for walking and cycling infrastructure**.
- Through better planning, better and smarter investing, most MobiliseYourCity members can **leverage a window of opportunity to leapfrog to sustainable urban mobility systems**.
- Conducting a rigorous mobility, institutional and financial diagnosis provides decision-makers with the **data needed for evidence-based policymaking**.
- **Measures to professionalise paratransit are being included in SUMPs and NUMPs**, and these measures are moving to implementation.
- **Pilot projects and tactical interventions** are an effective, low-cost way of promoting sustainable modes and approaches to planning.
- While causing implementation delays, the relentless pandemic has also **encouraged innovation in data collection**. To mitigate the challenges in traditional data collection, mobile phone network data was used to complement traditional mobility data. This coupling of two data sources enabled the creation of more realistic baseline data prior to February 2020.
- **Our data confirms general global trends but there are still some shortcomings in the quality of data** due to several reasons, ranging from the quality of the locally available data to the limited access the Secretariat has to certain types of information.

We offer practitioners tested and scalable solutions, tailored methodologies, and trainings on SUMPs, NUMPs, and MRV.

# Advocacy and outreach: connecting and communicating for a systems' transformation

**Over the last five years, we have continuously advocated for cities and countries to shift their approach from conventional transport planning to sustainable mobility, and for more resources to support this transition.**

## HIGHLIGHTS FROM 2021

- After identifying it as a priority topic in the new strategy, **MobiliseYourCity elevated the topic of paratransit on the global agenda**.
- **We enabled our member cities and countries to share their experiences** across multiple platforms to wide audiences.
- With more than 13,500 downloads of our key knowledge products, **our communication is reaching its intended audience**.
- **We continued to promote SUMPs and NUMPs** as our core area of work.
- **We built new partnerships** to animate ambitious action and resource sustainable mobility.

# Behind the scene: the life of a global Partnership

**The MobiliseYourCity Partnership is scaling up and continues extending its support to cities and countries.**

## HIGHLIGHTS FROM 2021

- **Two cities** (Yerevan, Armenia and Nouakchott, Mauritania) **and one new Knowledge and Network Partner** (The Global Partnership for Informal Transportation) **joined MobiliseYourCity**.
- The German Ministry of Environment passed on the role of chair of the **Steering Committee to the Agence Française de Développement**.
- **MobiliseYourCity partners strengthened their ties to improve services to members**. They notably facilitated knowledge and experience sharing among themselves and coordinated their efforts.
- **MobiliseYourCity animates ambitious action on sustainable transport across various groups**, including the Marrakesh Partnership for Global Climate Action, the Eltis SUMP Platform Coordinating Group, the SLOCAT Task Force on Transport Community Engagement in the UNFCCC, and the Movin'On LAB Africa Steering Committee.
- Thanks to funding from AFD and BMUV, **four new people joined the Secretariat**, reinforcing the teams' capacity in capacity building.

# Looking forward: supporting the implementation of SUMPs

One year after the adoption of the new strategy for MobiliseYourCity, the priorities identified in the strategy have been confirmed and have proven to serve as an effective tool to guide the action of the partners working together.

In 2022, MobiliseYourCity will prioritise governance and active modes, the two other critical topics that currently represent an implementation gap.

This year should also bring a series of additional resources which will help scale up capacity development, notably training materials that will allow anyone to replicate MobiliseYourCity training anywhere in the world.

MobiliseYourCity partners are more than ever committed to empower cities across the world to take ambitious action to transform mobility. We are looking forward to expanding our collaboration with new partners in 2022.

# 1 The MobiliseYourCity Global Partnership

**Since being launched in December 2015 at COP21, the MobiliseYourCity Partnership has become the leading global Partnership for sustainable urban mobility planning, policy development, and increasing investment for sustainable transport in developing and emerging economies.**

Our Implementing Partners, primarily the Agence Française de Développement (AFD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), are working with cities and countries across the world to develop scalable solutions to improve mobility in complex environments.

Today, the Partnership has 65 member cities with a combined population of over 114 million people in 30 countries. Thanks to the generous contributions of the European Union, the Agence Française de Développement, the French Ministry for the Ecological Transition (MTE), the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV) and the French Facility for Global Environment (FFEM), as of February 2022, the Partnership has raised 40 million euros in grants to support 39 member cities and 8 member countries, 3 non-member countries and 6 non-member cities with technical assistance and project preparation, which has already mobilised additional loans for concrete sustainable urban mobility projects. With this investment, we expect an additional 7 million people to have access to public transportation services.

The Partnership was founded by Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), Agence Française de Développement (AFD), Coopération pour le Développement et l'Amélioration des Transport Urbains et Périurbains (CODATU), Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement (Cerema) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. We are an international transport initiative under the UN Marrakesh Partnership for Global Climate Action and a member of the SuM4All Consortium.

We are a Partnership dedicated to enabling transformative change in urban mobility. By leveraging the unique core competencies of a wide range of organizations, we act as a knowledge hub and collaborate to generate solutions that exceed what we could do alone, helping make lasting positive change possible.


# Our vision

## A climate compatible and socially just future mobility

**We work together as partners to shape low-carbon mobility systems that contribute to economically vibrant, safe, and just cities for all urban residents of today and the future.**

# Our mission

## Paving the way through collaborative planning and action

**Our mission is to incubate scalable solutions, accelerate the adoption of proven approaches, and facilitate complex change processes to transform urban mobility.**

### We plan for transformative change

We support our member cities and countries to shift from road-centric transport planning to mobility planning that focuses on meeting the needs of all people while balancing the needs of our planet.

### We bridge planning with implementation

While full implementation of mobility plans and investment programmes remains the responsibility of our member cities and countries, we secure results by accompanying our member cities from planning to implementation, through policy and regulatory reforms, small scale investments and digital technologies.

### We build capacities and scale solutions

To facilitate lasting change at a global level, we focus on developing, deploying and scaling tested solutions that lead to real results. The Partnership works as a knowledge hub to create, disseminate and scale knowledge. By bringing together global experts with local practitioners we can generate solutions that are ambitious, adaptable and achievable. Our partners work together to add value to each other's contributions.

### We motivate others through tangible results

We inspire our members to take bold, ambitious actions toward decarbonized and just mobility systems, and we animate others to support them to do so. We gain their trust by collecting and communicating results that will improve the lives of their people.

# Who the Partnership brings together

**The MobiliseYourCity Partnership brings together partners who are working together to support cities and countries in advancing sustainable urban mobility. The modes of participation can be distinguished in four different partnership categories:**

- **City and Country Members**
- **Donors**
- **Implementing Partners**
- **Knowledge and Network Partners**

## City and country members

**The MobiliseYourCity Partnership has 65 member cities and 15 member countries. Our Implementing Partners are supporting 31 cities and 9 countries in preparing SUMPs and NUMPs respectively.**

| | Member cities | SUMPs | Member countries | NUMPs |
|---|---|---|---|---|
| Target | 100 | 60 | 20 | 13 |
| Worldwide | 65 | 31[1] | 15 | 9[2] |
| Population | 114 million people | 75 million people | 722 million people (urban population) | 206 million people (urban population) |
| Africa | 32 | 11 | 8 | 2 |
| Asia | 11 | 9 | 4 | 2 |
| Latin America | 17 | 9[1] | 3 | 5[2] |
| Eastern Europe | 5 | 3 | 0 | 0 |

1 Two SUMPs supported in nonmember cities

2 Three NUMPs supported in nonmember countries

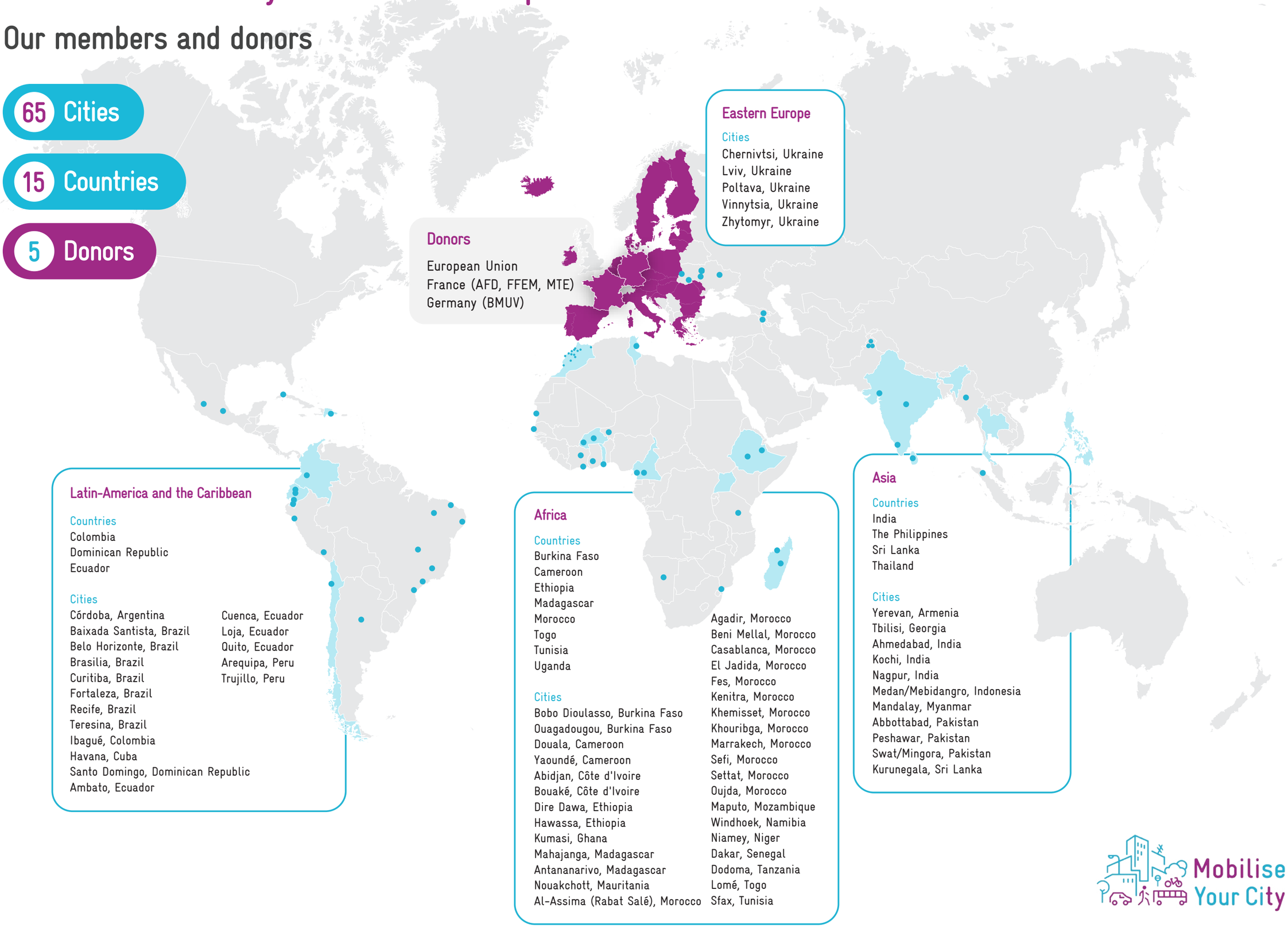
# The MobiliseYourCity Global Partnership

## Our members and donors

**65** Cities

**15** Countries

**5** Donors



### Eastern Europe

Cities
Chernivtsi, Ukraine
Lviv, Ukraine
Poltava, Ukraine
Vinnytsia, Ukraine
Zhytomyr, Ukraine

### Donors

European Union
France (AFD, FFEM, MTE)
Germany (BMUV)

### Latin-America and the Caribbean

Countries
Colombia
Dominican Republic
Ecuador

Cities
Córdoba, Argentina
Baixada Santista, Brazil
Belo Horizonte, Brazil
Brasilia, Brazil
Curitiba, Brazil
Fortaleza, Brazil
Recife, Brazil
Teresina, Brazil
Ibagué, Colombia
Havana, Cuba
Santo Domingo, Dominican Republic
Ambato, Ecuador
Cuenca, Ecuador
Loja, Ecuador
Quito, Ecuador
Arequipa, Peru
Trujillo, Peru

### Africa

Countries
Burkina Faso
Cameroon
Ethiopia
Madagascar
Morocco
Togo
Tunisia
Uganda

Cities
Bobo Dioulasso, Burkina Faso
Ouagadougou, Burkina Faso
Douala, Cameroon
Yaoundé, Cameroon
Abidjan, Côte d'Ivoire
Bouaké, Côte d'Ivoire
Dire Dawa, Ethiopia
Hawassa, Ethiopia
Kumasi, Ghana
Mahajanga, Madagascar
Antananarivo, Madagascar
Nouakchott, Mauritania
Al-Assima (Rabat Salé), Morocco
Agadir, Morocco
Beni Mellal, Morocco
Casablanca, Morocco
El Jadida, Morocco
Fes, Morocco
Kenitra, Morocco
Khemisset, Morocco
Khouribga, Morocco
Marrakech, Morocco
Sefi, Morocco
Settat, Morocco
Oujda, Morocco
Maputo, Mozambique
Windhoek, Namibia
Niamey, Niger
Dakar, Senegal
Dodoma, Tanzania
Lomé, Togo
Sfax, Tunisia

### Asia

Countries
India
The Philippines
Sri Lanka
Thailand

Cities
Yerevan, Armenia
Tbilisi, Georgia
Ahmedabad, India
Kochi, India
Nagpur, India
Medan/Mebidangro, Indonesia
Mandalay, Myanmar
Abbottabad, Pakistan
Peshawar, Pakistan
Swat/Mingora, Pakistan
Kurunegala, Sri Lanka

Mobilise Your City

# Donors

**Our funds to support cities and countries come from the European Union and the governments of France and Germany.**

| Donors | Amount |
|---|---|
| **The European Union** | **21.5 M€** |
| European Commission's Directorate-General for International Partnerships (DG INTPA) – EUCOCLIMA+ | 13 M€ |
| European Commission's Directorate-General for International Partnerships (DG INTPA) – EUROCLIMA+ Country dialogue | 2 M€ |
| European Commission's Directorate-General for International Partnerships (DG INTPA) – Asian Investment Facility | 3.5 M€ |
| European Commission's Directorate-General for International Partnerships (DG INTPA) – Intra-ACP | 3 M€ |
| **France** | **11.5 M€** |
| Agence Française de Développement (AFD) | 8 M€ |
| French Ministry of Ecological Transition (MTE) | 1.5 M€ |
| French Facility for Global Environment (FFEM) | 2 M€ |
| **Germany** | **7 M€** |
| German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV) | 7 M€ |
| **TOTAL** | **40 M€** |

"A functioning mobility system is the backbone of a functioning city, because it connects people to job opportunities and to basic services and, if well planned, it can optimise the social and the economic advantages of living in urban areas."

**Paolo Ciccarelli**
*Head of Unit F4 – Sustainable Transport and Urban Development, DG INTPA, European Commission*

# Implementing Partners

**Implementing Partners provide our city and country members with technical assistance to elaborate Sustainable Urban Mobility Plans and National Urban Mobility Policies or Investment Programmes.**

| Implementing Partners | SUMPs supported | NUMPs supported | Total volume of projects |
|---|---|---|---|
| AFD | 24[1] | 3 | 23.8 M€ |
| GIZ | 8[2] | 7[3] | 25.3 M€[4] |

1 Including collaborations or subcontracting with CODATU, Cerema and ADEME.

2 Two in nonmember cities

3 Three in nonmember countries

4 Includes a 9.1M € contribution from BMZ for SUMPs in Ukraine. Funding from MobiliseYourCity donors and implemented by GIZ reached 16.2 M€.

**The Agence Française de Développement (AFD)** is the French public institution in charge of implementing France's policy in the areas of development and international solidarity. The AFD funds, supports and accelerates the transition to a fairer and more sustainable world. The AFD has already supported the development of three completed SUMPs in Santo Domingo (Dominican Republic), and Douala and Yaounde, (Cameroon) and two NUMPs (Cameroon and Tunisia). With 23.8 million euros for implementing MobiliseYourCity related activities, AFD is currently supporting the development of SUMPs and NUMPs in 24 cities and 5 countries respectively.

**The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)** GmbH is Germany's leading provider of international cooperation services. As a federal enterprise, it supports the German Government in achieving its objectives in the field of international cooperation for sustainable development. GIZ is supporting the development of SUMPs and NUMPs and provides staff for the Secretariat of the Partnership. With 25.3 million euros for implementing MobiliseYourCity related activities, GIZ is currently supporting the development of SUMPs and NUMPs in 8 cities and 9 countries respectively. On behalf of the German Federal Ministry of Economic Cooperation and Development, the GIZ has also supported 3 MobiliseYourCity Member Cities in Ukraine preparing SUMPs.

**ADEME** is a French public agency aiming at supporting the ecological transition. It is active in the implementation of public policy in the areas of the environment, energy and sustainable development.

**Cerema** is a French public institution supporting public policies, working under the authority of the French Ministry of the Ecological and Inclusive Transition and the Ministry of Territories' Cohesion and Relationship with Local and Regional Authorities.

**CODATU** (Cooperation for urban mobility in the developing world) is an association with an international focus which works to promote sustainable urban mobility policies through training activities, scientific exchanges, technical assistance and advice to local and national authorities. CODATU provides staff to the Secretariat of the Partnership under a convention with the AFD. The CODATU members are local governments and transport authorities, training and research institutes, the private sector and individual experts.

**The European Bank** for Reconstruction and Development (EBRD) works across three continents to further progress towards 'market oriented economies and the promotion of private and entrepreneurial initiative'.

**KfW** is a German state-owned development bank, based in Frankfurt. It promotes sustainable prospects for people, companies, the environment and society. It focuses on topics in line with the UN's Sustainable Development Goals (SDGs).

**Wuppertal Institute** is a leading international think tank for sustainability research focused on impacts and practical application. The organisation's activities are centred on developing transformation processes aimed at shaping a climate-friendly and resource-efficient world. As part of MobiliseYourCity, the Wuppertal Institute supports the city of Belo Horizonte, Brazil, in the implementation of a pilot project.

# Knowledge and Network partners

**Knowledge and Network Partners are internationally- or regionally-operating or country-focused not-for-profit organizations, institutions, think tanks, affiliated technical assistance programs or other organizations associated with the MobiliseYourCity Partnership.**

The European Cyclists' Federation (ECF) has been the voice of European cyclists for nearly 40 years. As Europe's biggest pro-cycling federation, ECF represents organisations in 40 countries with over 500,000 active members. The ECF has pledged to ensure that bicycle use achieves its fullest potential to bring about sustainable mobility and public well-being. To achieve these aims, ECF seeks to change attitudes, policies and budget allocations at the European level. ECF stimulates and organises the exchange of information and expertise on bicycle related transport policies and strategies as well as the work of the cyclists' movement.

The Global Partnership for Informal Transportation (GPIT) works hand-in-hand with informal urban transportation systems of the Global South to advance innovation, improve services, and change business models. By leveraging new technology and innovative policies, informal networks can confront climate change and make cities work for everyone.

ITDP is a global organization at the forefront of innovation, using technical expertise, direct advocacy, and policy guidance to mitigate the impacts of climate change, improve air quality, and support prosperous, sustainable, and equitable cities. They have worked with over 100 cities in more than 40 nations to design and implement transport and urban development systems and policy solutions that make cities more viable, fair, and liveable.

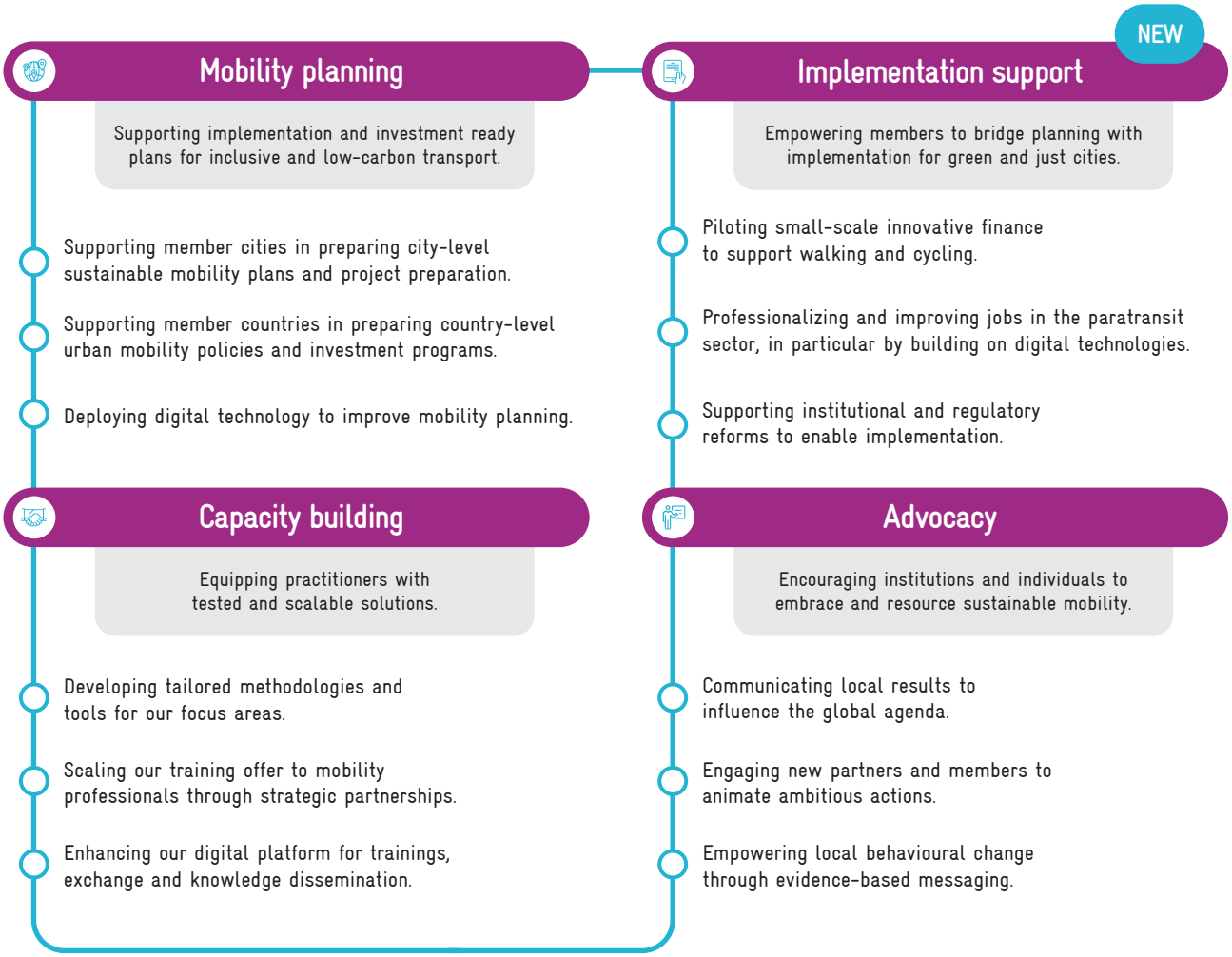
PLATFORMA is the pan-European coalition of towns and regions – and their national, EU and global associations – active in city-to-city and region-to-region development cooperation. They are a hub of expertise on European local and regional governments' international action and aim at boosting European local and regional governments' contribution to EU development cooperation policies and international frameworks.

UCLG, as a global network of cities and local, regional, and metropolitan governments and their associations, is committed to representing, defending, and amplifying the voices of local and regional governments to leave no-one and no place behind.

UN-Habitat works with partners to build inclusive, safe, resilient and sustainable cities and communities. UN-Habitat promotes urbanization as a positive transformative force for people and communities, reducing inequality, discrimination and poverty.

# How we support cities and countries

**The MobiliseYourCity Partnership supports member cities and countries through four main service areas. Already 40 million euros have been raised to fund projects in these four service areas.**




## Mobility planning

### Supporting implementation and investment ready plans for inclusive and low-carbon transport

Our Implementing Partners, primarily the Agence Française de Développement (AFD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), are working with cities and countries all over the world to prepare implementation ready mobility plans and finance ready projects to improve mobility in complex environments. They support member countries to develop national urban mobility policies and investment programs (NUMPs), and member cities to develop sustainable urban mobility plans (SUMPs), encouraging the use of digital technology to improve mobility planning.

### Access to finance

After receiving technical Assistance for mobility planning and project preparation, member cities and countries are supported to identify accessible and affordable financing solutions by either directly financing certain parts of the SUMPs and NUMPs in the case of our banking partners and/or linking investments to other potential financiers of mobility infrastructure and equipment.

## Implementation support

### Empowering members to bridge planning with implementation for green and just mobility

We offer targeted implementation support to bridge the implementation gap for small-scale and critical measures that is due to low local capacities to allocate finance and, generally, too small amounts to attract external financiers. We focus on three areas: walking and cycling, paratransit, and policy and regulatory reforms.

## Capacity building

### Equipping practitioners with tested and scalable solutions

We develop tailored methodologies and tools to develop capacity to plan, finance and implement sustainable mobility solutions. By acting as a knowledge hub, we ensure methodologies are constantly improved and insights extracted from the SUMPs.

**In-person and online training:** We offer our members access to webinars and training to develop their skills to improve mobility in their city or country.

**An online collaboration platform:** To allow local partners to share their experience and get access to the latest knowledge on sustainable mobility, we are giving them the opportunity to exchange information and experiences with other cities and countries through our online social platform.

## Advocacy

### Encouraging institutions and individuals to embrace and resource sustainable mobility

We advocate for a change in how cities and countries approach mobility by using the enable-avoid-shift-and improve model (EASI), which puts people's need for connection and access at the forefront of mobility planning. Because we are convinced that this is a successful way of improving urban mobility and decarbonizing transport, we advocate for increased resources for technical assistance to scale up this approach and the financial resources to implement it. Our advocacy work is grounded in our experience in implementing this model through SUMPs and NUMPs in our member cities and countries.

"Efficient and strategic actions do not necessarily entail costly or sophisticated technology."

**Solène Baffi**
*CODATU, Project manager*

# Our contribution to the SDGs

By assisting cities and countries in the planning and implementation of effective measures to decarbonise urban transport, the Partnership supports the goals set forth under the UNFCCC dialogue and many urban-related goals specified in the New Urban Agenda as well as the Sustainable Development Goals (SDGs). We also support countries in meeting their Nationally Determined Contributions (NDCs) targets by reducing GHG emissions.

## 3 GOOD HEALTH AND WELL-BEING

**Ensure healthy lives and promote well-being for all at all ages**

**Targets**

**3.6 -** By 2020, halve the number of global deaths and injuries from road traffic accidents

**MobiliseYourCity Contribution**

The implementation of road security measures from the SUMPs in Medan, Indonesia, Turjillo, Peru and Yaoundé, Cameroon alone, is projected to save nearly 800 lives every year.

## 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

**Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

**Targets**

**9.1 -** Develop quality, reliable, sustainable and resilient infrastructure

**9.a -** Facilitate sustainable and resilient infrastructure development in developing countries through enhanced FA and TA acilitate sustainable and resilient infrastructure development in developing countries through enhanced FA and TA

**MobiliseYourCity Contribution**

Developing reliable, sustainable and resilient infrastructure is at the heart of the MobiliseYourCity Partnership. In just nine cities (Douala, Yaoundé in Cameroon, Santo Domingo in Dominican Republic, Lviv, Poltava and Zhytomyr in Ukraine, Casablanca in Morocco, Curridabat and Montes de Oca in Costa Rica, San Juan de Comalapa in Guatemala), 4 metro lines, 6 BRT corridors, 6 bus corridors, 6 tram lines, 1 cable car, and more than 34 transport hubs, stations and depots will be financed through investments mobilised by the Partnership.

40 million euros in TA provided by the Partnership have leveraged 1.296 billion euros to build quality, reliable, sustainable and resilient infrastructure. An additional 13 billion euros in investments in infrastructure have been identified and ready to be developed.

## 11 SUSTAINABLE CITIES AND COMMUNITIES

**Make cities and human settlements inclusive, safe, resilient and sustainable**

**Targets**

**11.2 -** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations

**11.6 -** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality

**MobiliseYourCity Contribution**

In just three partner cities, an additional 7 million people will benefit from improved access to safe, affordable, accessible and sustainable public transport. MobiliseYourCity is directly supporting an additional 42 cities with a combined population of 92 million people.

In Santo Domingo, $600,000 have been secured for improving access to public transport for disabled persons. Another $600,000 will be invested in conducting a study to develop a tariff subsidy for the most vulnerable populations.

MobiliseYourCity contributes to improving air quality in cities. A MRV approach has been developed by the Partnership, but data is not yet available.

## 13 CLIMATE ACTION

**Take urgent action to combat climate change and its impacts**

**Targets**

**13.2 -** Integrate climate change measures into national policies, strategies and planning **13.3 -** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

**MobiliseYourCity Contribution**

MobiliseYourCity Implementing Partners are supporting 9 countries to integrate climate change measures into national policies through NUMPs.

Successful implementation of SUMPs is expected to lead to annual GHG emissions reduced by an average of –20% (ranging from –7% to –26%), compared to business as usual.

The projected impact from 5 SUMPs with projection on GHG impact is:

- Casablanca, Morocco (timeframe 2020-2030): 7% reduction in SUMP scenario vs. BAU
- Douala, Cameroon (timeframe 2019-2029): 20% reduction in SUMP scenario vs. BAU
- Medan, Indonesia (timeframe 2020-2035): 19% reduction in SUMP scenario vs. BAU
- Santo Domingo, Dominican Rep. (timeframe 2018-2030): 26% reduction in SUMP scenario vs. BAU
- Yaoundé, Cameroon (timeframe 2018-2035): 21% reduction in SUMP scenario vs. BAU

## 17 PARTNERSHIPS FOR THE GOALS

**Strengthen the means of implementation and revitalize the global partnership for sustainable development**

**Targets**

**17.3 -** Mobilise additional financial resources for developing countries from multiple sources

**17.9 -** Enhance international support for implementing effective and targeted capacity building in developing countries to implement all the sustainable development goals

**17.19 -** Enhance the global partnership for sustainable development to share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs

**MobiliseYourCity Contribution**

The technical assistance provided by the Partnership to the first completed SUMPs and NUMPs has already leveraged 1.296 billion euros (secured finance) and is expected to leverage an additional 3.896 billion euros (planned finance).

MobiliseYourCity is a global partnership for sustainable development that mobilises and shares knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in 15 partner countries and 65 partner cities.

The Partnership has established a knowledge platform as a particular instrument to share knowledge on sustainable mobility.

# 2 Mastering Mobility: Capacity building and methodologies

**Empowering mobility practitioners and decision-makers to transform urban mobility has been at the heart of MobiliseYourCity's service orientation since its inception in 2015. To master mobility for green and inclusive cities, individuals and institutions require strong skills, knowledge, tools, and the opportunity to exchange and share their ideas. This is why methodology development, capacity building, communities of practice and mobility planning go hand in hand in MobiliseYourCity.**

**Our methodologies are based on extensive global implementation experience.** Our methodological framework synthesizes the knowledge required to plan for sustainable urban mobility at the local and national level. It does so by merging theory with practice in highly actionable and scalable methodologies on SUMPs, NUMPs and greenhouse gas monitoring-reporting and verification (MRV). As we consolidate our core methodology on sustainable urban mobility planning, we turn our attention to other topics of central importance to our member cities and countries, such as paratransit and electric mobility.

**Our trainings are designed to be freely available, readily adaptable, and easily scaled.** Capacity building brings in the human touch. A highly committed team of urban mobility experts engages with practitioners, decision makers, advocates and students through trainings and workshops to address key pressing issues and disseminate our methodological framework. We scale our capacity building offer by making successful trainings conducted through individual SUMPs available to all our partners and audiences.

**Our Communities of Practice enable peer learning, and also influence our methodological framework:** Regional Communities of Practice in Africa, Asia and Latin America provide a space in which mobility practitioners with a common identity, a common goal, and common interests can learn from each other by sharing their experiences and co-creating, together with MobiliseYourCity, new knowledge and solutions to our common challenges.

# With five new publications, our methodological support is evolving together with the needs of our partners

In 2021, we identified paratransit as a key priority area through our two co-creation sessions with the African Community of Practice on that same topic, and as more and more SUMPs and NUMPs throughout the world identify the need to modernise this essential sector as a key priority. Paratransit is, after all, the most important mode of collective transport in most cities in Africa, Asia, and Latin America.[1]

Our collective efforts in 2021 thus focused on bringing paratransit into the international agenda through dedicated advocacy activities, while simultaneously developing the necessary methodological guidance to understand and reform paratransit, as the title of our two-part flagship publication on paratransit, jointly developed by AFD and CODATU precisely articulates:

- **Understanding Paratransit: Defining and diagnosing paratransit for sustainable mobility planning** provides a concise definition and accessible categorisation of the myriad of paratransit services, including practical guidance on how to conduct a diagnosis of the sector in the context of sustainable urban mobility planning.

- **Reforming Paratransit: A catalogue of practical actions for policy-makers and practitioners** presents a comprehensive list of actions that can and should be implemented by public authorities to support the modernisation and decarbonisation of the paratransit sector, by transforming it into an attractive, accessible and clean public transport alternative in countless cities and for millions of citizens that already rely on these services as their main mode of transportation.

In a similar vein, EBRD, together with GIZ and UITP, published its latest policy and guidance paper for the electrification of public transportation. Going electric: A pathway to zero-emission buses, intends to facilitate policymaking, the development of electric bus schemes and the supporting project finance to accelerate e-bus adoption worldwide. This publication is complemented by our methodological guide Monitoring, Reporting, and Verification Systems for Electric Bus Projects, which provides a concise methodology to design MRV systems for e-buses based on Colombia's experience.

Last but not least, in 2021 the Secretariat released the Frequently Asked Questions about Sustainable Urban Mobility Plans, after identifying and answering the most common concerns raised by our partners and all practitioners engaging in SUMP elaboration.

Today, MobiliseYourCity's counts with a comprehensive methodological framework that goes beyond SUMPs, NUMPs and MRV and encompasses paratransit and electric mobility as well.

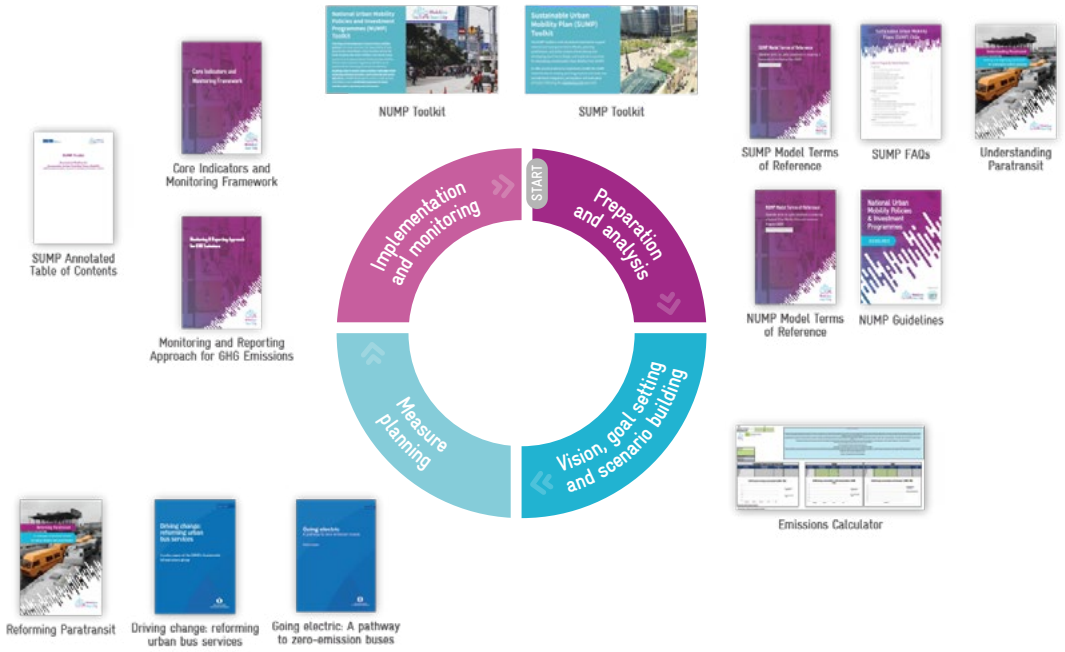
1 The SUMPs in Douala and Yaoundé, Cameroon, Santo Domingo, Dominican Republic, and the Tunisian and Philippines NUMPs have identified concrete measures to improve and modernise the paratransit services in their corresponding jurisdictions. The majority of them are already implementing these measures or getting ready to do so.

"In Chile, the NUMP methodology came at the right moment [...]. The [...] NUMP Guidelines helped us take a step back and find sense again in the process, by bringing a lot of confidence and trust that we 'will make it'.

Trust the methodology, as the methodology understands the different layers and articulates different levels very well. The methodology will cover the needs to build a strong policy."

**Andrea Palma**
*Project Manager of Chile's NUMP, GIZ*

# MobiliseYourCity's tools and methodologies




## With 350+ products collectively viewed over 300,000 times, our Knowledge Platform has established itself as the international knowledge hub on sustainable mobility planning

As our menu of tools, methodologies and other products grows, so does our Knowledge Platform. In this virtual library, we gather valuable knowledge not only from the Partnership itself, but also make available the latest publications of our Implementing and Knowledge and Network Partners. In 2021, we added more than 120 new knowledge products, and currently count with over 370 freely available items. This wealth of knowledge covers diverse topics, such as urban mobility planning, active transport, public transport, tactical urbanism, financing, MRV, e-mobility, paratransit, and much more.

Demand for our tools and methodologies is ever increasing. MobiliseYourCity's Emissions Calculator remains our most popular and widely used tool, with more than four thousand views. Our SUMP and NUMP methodologies and our latest Paratransit Toolkit are high on demand as well, reaching between 700 and 1,100 views per item.

"After five years as a key implementing partner and three years as a donor of the MobiliseYourCity Partnership, we are proud to have contributed to creating a knowledge hub to promote low carbon urban mobility. The Partnership offers multiple tools and methodologies, which build on the diverse strengths of the partners, for planning in a participative way and measuring impacts. These methodologies and tools help setting up high standards for SUMPS and NUMPs."

**Lise Breuil**
*Head of the Transport and Mobility Division at AFD*

## Downloads of MobiliseYourCity's main knowledge products

**13,511**

### Emissions Calculator

**4,941**

MobiliseYourCity Emissions Calculator: 4,114

MobiliseYourCity Monitoring and reporting Approach for GHG Emissions: 827

Build and compare scenarios based on the GHG mitigation impact

### MobiliseYourCity Communication Products

**3,328**

Global Monitor: 1,094

Factsheets: 1,797

MobiliseYourCity tools and methodologies: 437

Showcasing the Partnership's achievements

### Public Transport

**2,100**

AFD's Tramways as sustainable mass-transit systems: 1,106

MobiliseYourCity Paratransit toolkit: 830

EBRD's publications: Reforming Urban Bus Services and Going Electric: 164

Modernise and electrify public transportation

### Sustainable Urban Mobility Plans (SUMP)

**1,903**

Model Terms of Reference: 701

Summaries and final reports: 1,056

Frequently asked questions: 146

All you need to successfully elaborate a SUMP

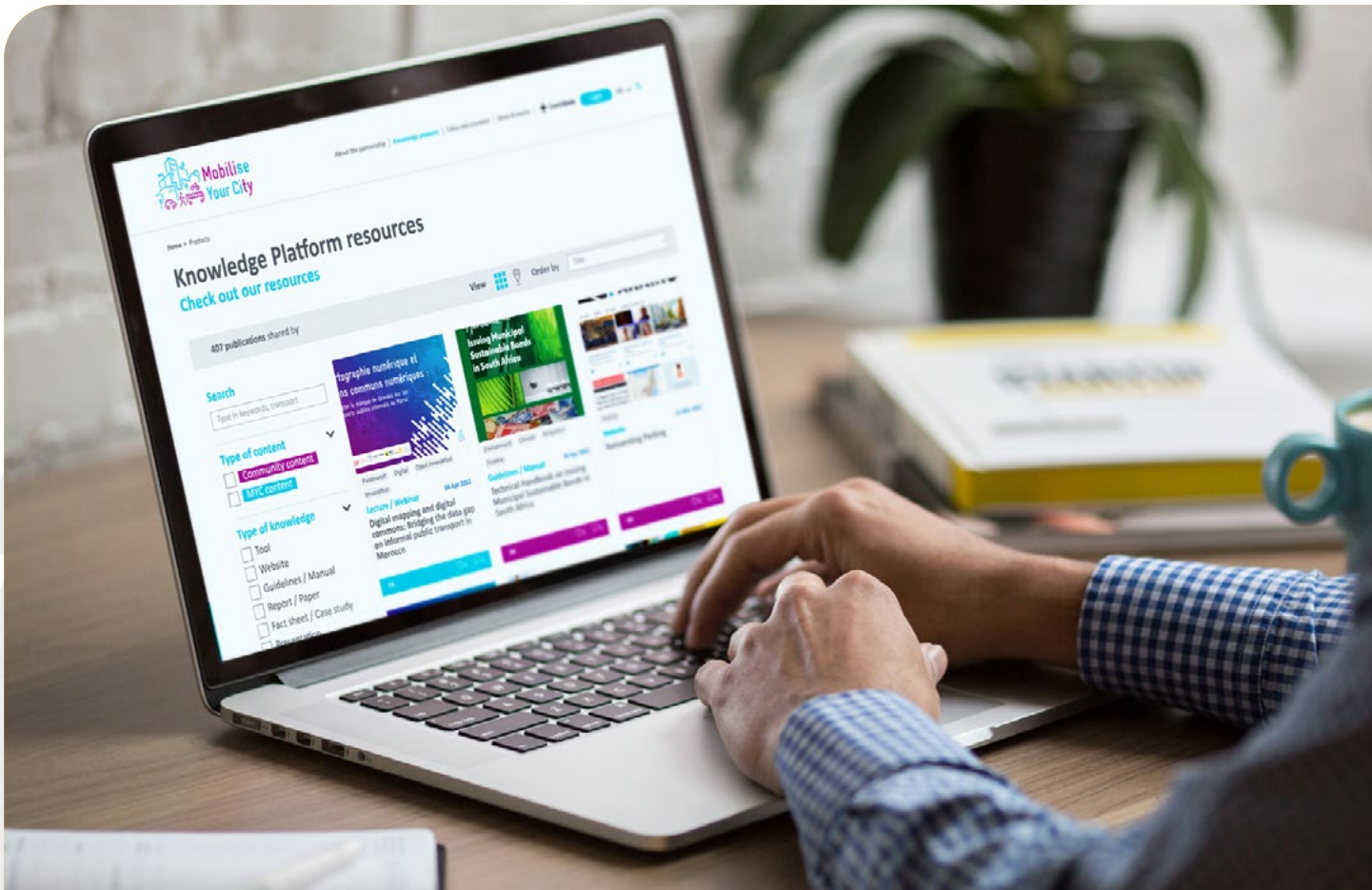
### National Urban Mobility Policies and Investment Programmes (NUMP)

**1,239**

MobiliseYourCity Guidelines: 1,040

Model Terms of Reference: 199

Step by step guidance to develop a NUMP



# Together with our Knowledge & Network Partners and pioneering cities, we helped equip over 1,000 mobility practitioners with practical skills

Building the capacities of our partners and Communities of Practice continues to play a central role of the Partnership and its Secretariat. In 2021, we not only more than doubled our training offer, but also tripled the number of people that benefitted from these trainings.

We have established **Mastering Mobility** as our main training series through which mobility practitioners from our partner governments and implementing organizations can acquire new knowledge and skills about sustainable mobility. In 2021, we teamed-up with ADEME, AFD, CODATU, GIZ and ITDP to provide tailored sessions on how to integrate air quality into SUMPs, data collection methods for an urban mobility diagnosis, fundamentals of active transportation and reforming and diagnosing paratransit. Furthermore, we adapted successful trainings conducted in the city of Medan, Indonesia, to train local practitioners throughout the entire SUMP elaboration process and scaled them to enrich our global capacity building service.

In total, more than 300 people participated in this year's Mastering Mobility Series. Not only did they join us online from 76 African, Asian, European, and Latin American cities, but they shared one commonality, diversity, both in terms of their professional backgrounds, as well as their gender.

Not only our local partners need support to understand and build the skills necessary to elaborate and make effective use of sustainable urban mobility planning. Our implementing organizations providing technical and financial support for SUMP and NUMP development also require the appropriate skills to be able to provide an excellent service, for which they are well known. For this purpose, AFD, together with the Project Management Unit in Asia and the Secretariat, offered three trainings to transport officials from ADB on the benefits and linkages between financing, climate change, paratransit and Sustainable Urban Mobility Planning, by sharing our long-standing experience developing SUMPs in cities in Asia, Africa and Latin America.

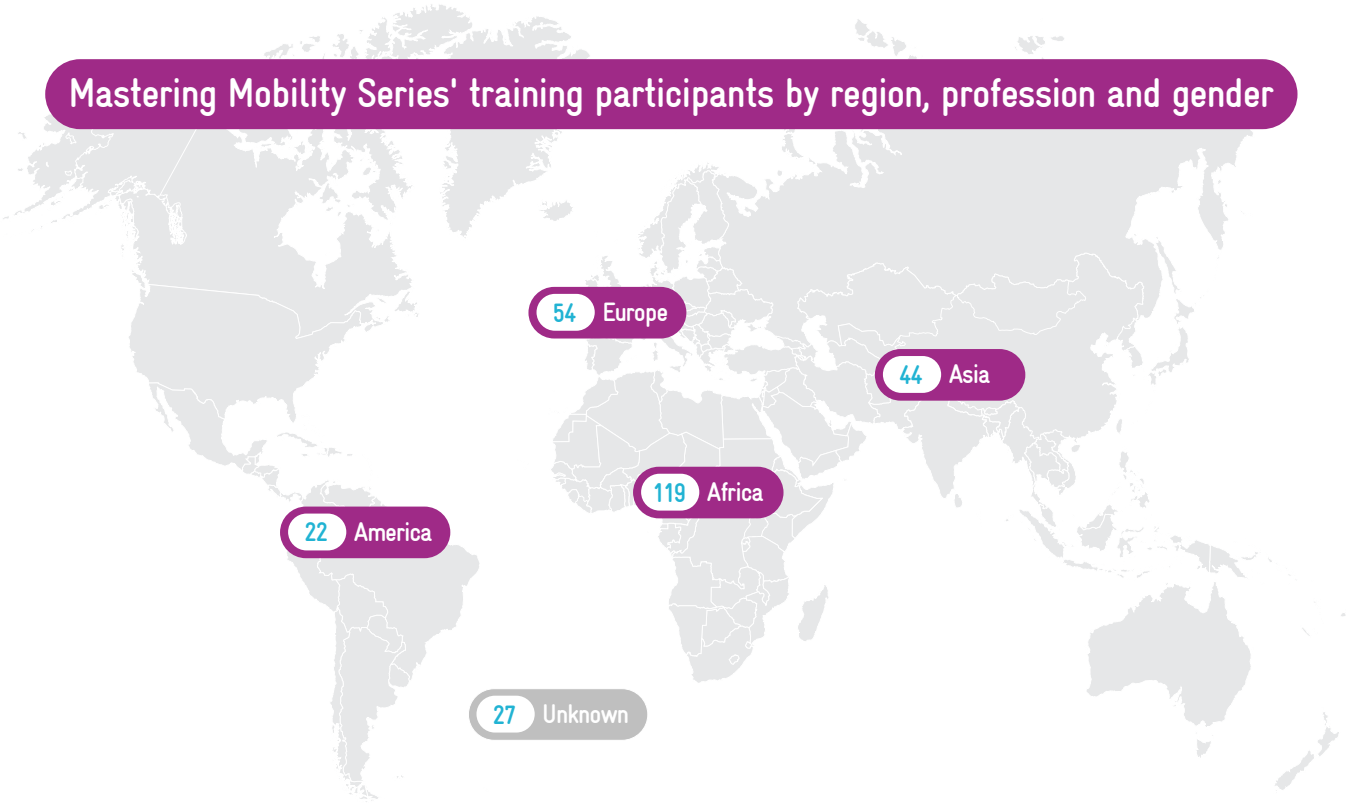
## Mastering Mobility

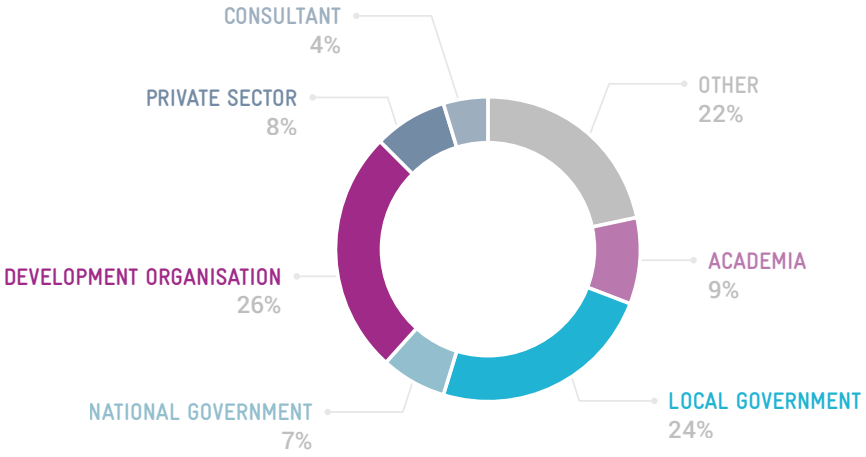
TRAINING SESSIONS (ONLINE)

| 2020 | 8 | 2021 | 20 |
|---|---|---|---|

Total participants in 2021 **1,015**

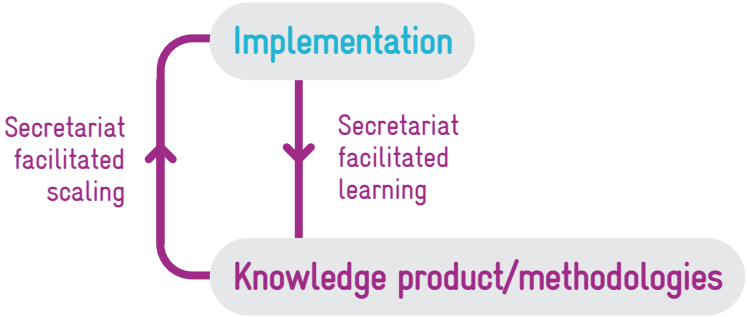
## Mastering Mobility Series' training participants by region, profession and gender





## Trainings in one city are creating content for the global community




Following MobiliseYourCity's SUMP ToRs, Medan developed a **training on data collection**.

The Secretariat adapted this training and delivered it to participants from **over 20 cities**.

The Secretariat is developing **training materials** out of this training to enable Implementing Partners to replicate the training in other places of the world.

# EUROCLIMA+ Community of Practice shares lessons learned as several cities adopt their SUMPs

EUROCLIMA+ has made great strides in its engagement with Latin America's Community of Practice. It accompanied its member cities throughout the entire SUMP development process by conducting a comprehensive learning programme on SUMPs with the cities' decision makers and practitioners, thus enabling continuous exchange and peer learning.

As many cities start adopting their SUMPs, EUROCLIMA+ organised a SUMP workshop by the end of 2021 that allowed its member cities to share their experiences with other cities in the region interested in developing SUMPs themselves. This event has not only generated interest in decision-makers to start develop their own SUMPs, it also allowed the pioneering cities to reflect upon the implementation phase of their plans, with a special focus on governance, financing and monitoring requirements.

# 3 Mobility Planning: Supporting SUMPs and NUMPs

Our Implementing Partners, particularly the Agence Française de Développement (AFD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), are working with 43 local governments and 12 national governments in 39 countries around the world to prepare implementation-ready mobility plans and finance-ready projects. In addition to supporting planning and project preparation, the Partnership is also supporting 10 cities with designing and implementing a diverse set of pilot projects, from introducing low speed zones around schools to setting up shared e-bicycles schemes.

MobiliseYourCity Members tend to be large, fast-growing cities, and the planning area often covers many municipalities. In the 31 cities where MobiliseYourCity Partners are supporting SUMPs, the average urban population is over 2.5 million with a growth rate over 2%, which is four to six times the rate of urban growth in France and Germany, which was approximately 0.3% in Germany and 0.5% in France in 2020. Using established yet adaptable tools and methodologies, such as SUMPs and NUMPs, enables practitioners to work effectively in complex and quickly changing environments.

However, adapting and applying the SUMP and NUMP preparation process is long and requires financial and technical resources that may not be available to local or national authorities. Therefore, supporting the preparation of projects and policies through technical assistance is a necessary intervention to enable further implementation of adequate measures to tackle local challenges in cities and to contribute to global sustainability agendas.

## What is a NUMP?

**A National Urban Mobility Policy or Investment Programme (NUMP) is a strategic, action-oriented framework for urban mobility, developed by national governments, enacted to enhance the capability of cities to plan, finance and implement projects and measures designed to fulfil the mobility needs of people and businesses in cities and their surroundings in a sustainable manner.**

## What is a SUMP?

**A Sustainable Urban Mobility Plan (SUMP) is a strategic plan developed in a participatory and integrated way to meet people and businesses mobility needs in cities and to harmonize and integrate existing planning approaches. It sets cities on a sustainable course regarding land use and urban mobility. Because each city is starting with a different baseline of transport plans, the MobiliseYourCity implementing partners and city members work together to adapt the SUMP process for local needs.**

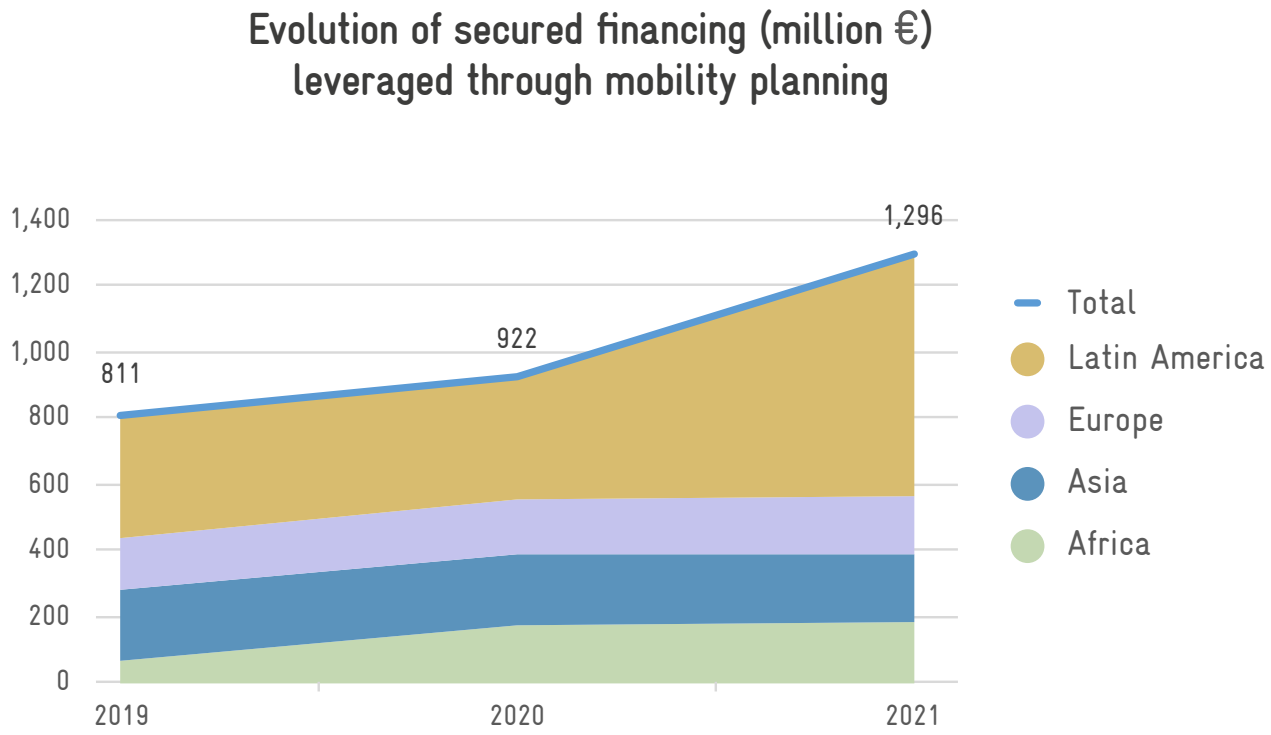
# SUMPs and NUMPs preparation have helped mobilise more than 1.2 billion euros

Without a paradigm shift, investments in urban transport often tend to favour assets that reinforce and lock-in unsustainable urban growth. SUMPs and NUMPs enable a shift and have been effective in identifying and kicking off the preparation of projects that contribute to more sustainable urban transport.

Every year since 2019, when the first SUMPs and NUMPs were completed and approved, the finance leveraged by the Partnership has been increasing. By the end of 2021, seven of our member cities (Douala and Yaoundé in Cameroon, Santo Domingo in Dominican Republic, Trujillo in Peru and Lviv, Poltava and Zhytomyr in Ukraine) have taken the next step of adopting their SUMPs and securing finance for selected measures. Additionally, two of our member countries have also completed their NUMPs (the Philippines and Tunisia). As a direct result, these cities and countries have secured 1,296 million euros financing for a range of measures, including physical infrastructure, feasibility studies, and capacity building.

As in previous years, the finance leveraged continues to be dominated by investments in public transport infrastructure, which represents 65% of the total investment need identified by the SUMPs and 68% of the total secured financing. About 1.263 billion euros has been secured for public transport investments identified through SUMPs. These investments include metro lines, BRT and bus corridors, cable cars, tramlines, stations/hubs/depots, and a large number of rolling stock, i.e. vehicles.

In addition to the investments for public transport, the SUMPs have also identified the need for nearly 2 billion euros to improve road infrastructure, over 379 million euros for dedicated walking and cycling facilities and over 11 million euros in investments to support the port area logistics. Of these identified investment needs, only 7% of the financing needed for active modes of travel and approximately 5% of the financing needed for improved roads has been already leveraged.



# By considering all modes of transport, SUMPs and NUMPs have mobilised 25 million euros for walking and cycling infrastructure

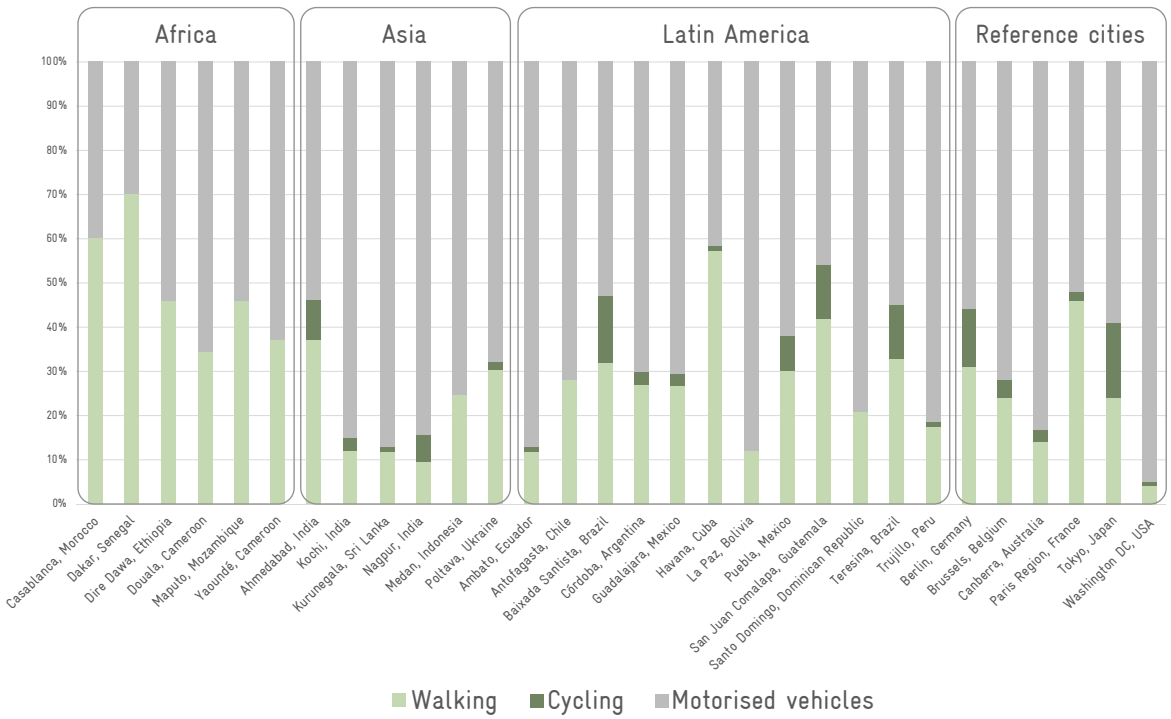
The SUMP approach ensures that walking is not overlooked in urban transport planning and, just as importantly, our standard terms of reference ensures that walking is also considered during investment planning. 32 of our member cities have some level of information on modal share, of which 26 have data specific to walking; and all of them show that walking is a key transport mode, especially for the poorest. In some of our member cities like Casablanca and Dakar, a majority of all trips within the city are made by foot; in these cases, approximately 60% and 70% respectively. Even in cities such as Kochi and Nagpur where a relatively low percentage of trips are made by foot, at 12% and 10%, walking is still an essential way for people to get to where they want and need to go.

Seven completed or nearly completed SUMPs and NUMPs have identified an investment need for 379 million euros to improve walking or cycling infrastructure, with a significant portion being for the action plan for walking in Antofagasta. Last year, the investment need identified for active modes of transport was just 88 million euros. Of the 379 million euros, approximately 25 million euros, or 7% of the total identified investment need, has already been mobilised.

With the exception of a few cities, cycling is limited in most of our members cities - but has great potential for growth. Latin America continues to be at the forefront of cycling. In the Brazilian cities of Baixada Santista and Teresina, cycling accounts for 15% and 12% of total trips, respectively. In Asia, the city of Mandalay, which is historically a cycling city, has also a relatively high modal share of 22% for cycling. Beyond these handful of cities, most other MobiliseYourCity members are not making the most of cycling. Unexpectedly, the significant disparities between cities does not seem to be solely linked to the climate and topography of the cities. While the champions of cycling are relatively flat cities (Mandalay, Teresina, Baixada Santista), other cities with similarly favourable topographical and climatic conditions, such as Dakar or Antofagasta, have almost no cycling. Further work should help to highlight how much enabling factors, such as developing cycling infrastructure that enables safe and efficient travel, providing e-bike options or promoting cycling to users, can be used to significantly increase the use of cycling as an attractive, safe and healthy means of transport.

## Modal share of active mobility in MobiliseYourCity member cities

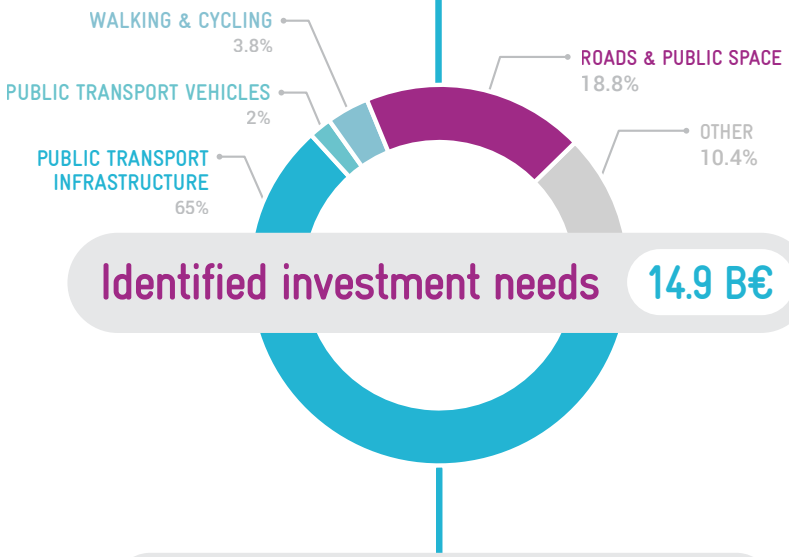
*and reference cities*



# Leveraging finance from SUMPs and NUMPs

**40 M€** Donor contribution

COMPLETED **7** SUMPs **4** NUMPs




**Identified investment needs** 14.9 B€

**Leveraged finance** 1.296 B€

DESTINATION

Countries 882 M€ | Cities 414 M€

SOURCES

Domestic 29% | International loans 64%

International grants 7%

An additional 24 SUMPs and 5 NUMPs are currently being supported, which will increase the identified investment needs, leveraged finance and impacts.

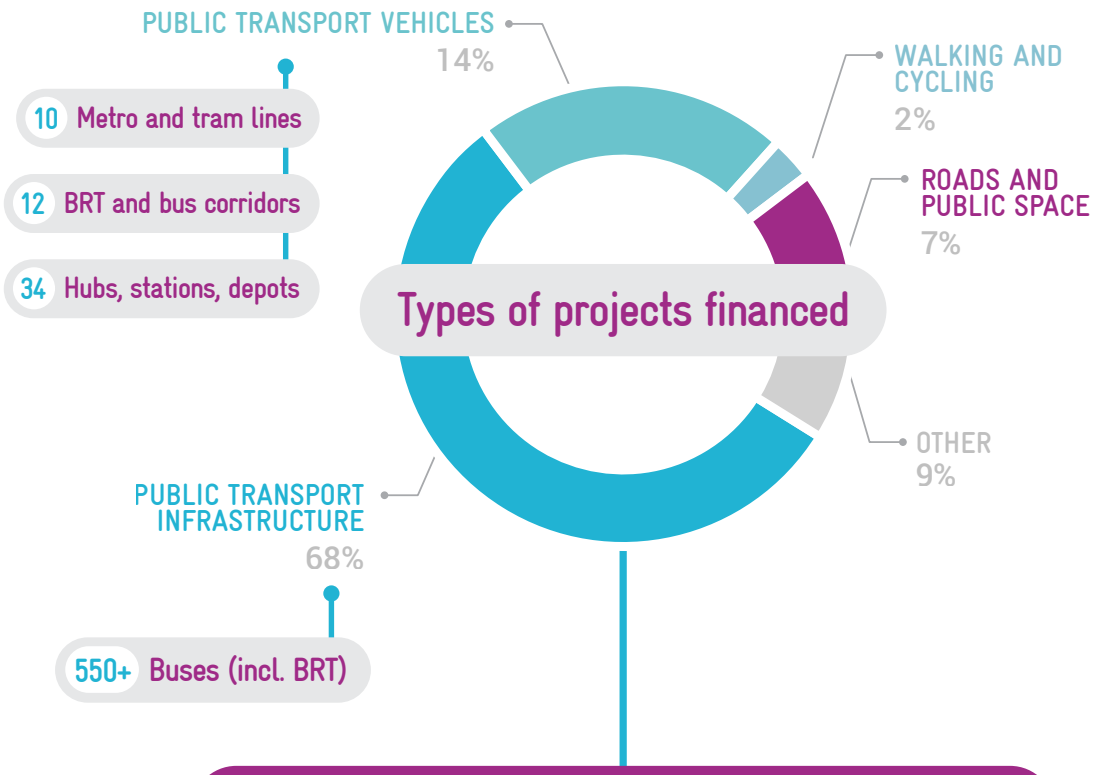
The percentages represented in the pie chart cover SUMPs investments, which represent a total investment need of 9.983 B€.

In addition to the leveraged finance to the left, there is 3.896 B€ financing in the pipeline, which we expect to be finalised in the near future.

## Mobility plans are key in securing financing

SUMPs and NUMPs help our city and country members identify the right projects or programmes for their needs, and we are able to identify the selected measures with cost estimates.

# Financed investments and projected impacts




## Contributing to low-carbon, safe, and just cities

- 7.52 $MtCO_2eq$ mitigation of annual GHG emissions in 2030 (compared to BAU)
- 7 million people with improved access to public transport
- +8% modal share of sustainable transport modes (compared to BAU)
- 800 lives saved annually through better road safety
- Improved job quality for transport workers

# Through better planning, better and smarter investing, most MobiliseYourCity members can leverage a window of opportunity to leapfrog to sustainable urban mobility systems

MobiliseYourCity works with a wide range of cities and countries that are very diverse in terms of their geographies, economies, and state of development. Nevertheless, when looking at the entirety of our member cities and countries across the world, we see a general trend that as their local economies grow, so do their emissions. Without attractive options for sustainable modes or transport, people generally seem to transition from active modes to private motorised vehicles or paratransit operators.

This common trend confirms that we are on the right track with our focus activities in the Partnership: we need to increase access to sustainable forms of mass transit and enable as many daily trips as possible to be made by active modes.

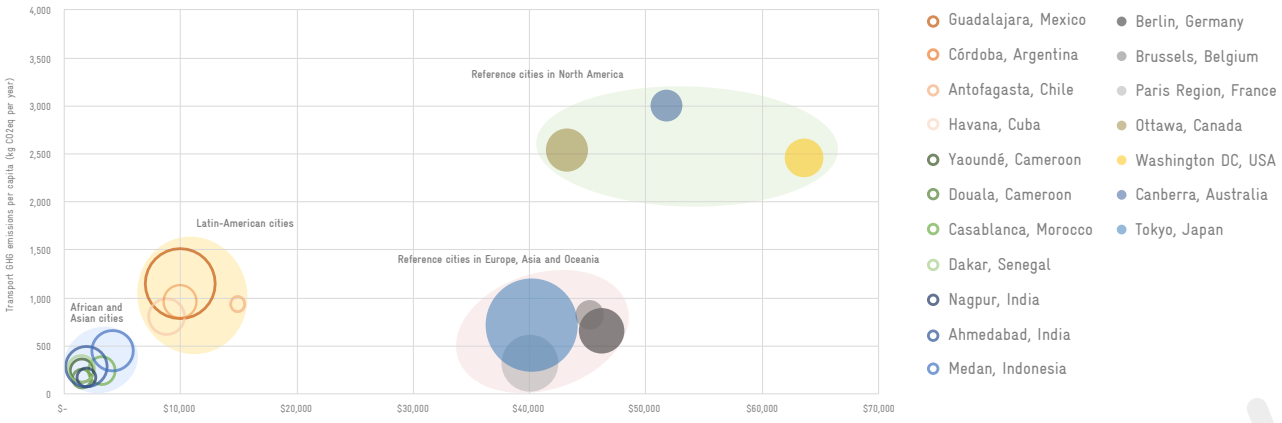
The diversity on the status quo, on the other hand, translates into variations in the focus and prioritisation of measures included in SUMPs. For example, in Latin America, with higher financial resources and more established and formal mass public transport systems, there is a stronger push towards electrification. In some of our members cities in Africa, on the other hand, there is still the need to support in more fundamental infrastructure needs like all-weather roads.

As diverse as all of the cities are in their GHG emissions, they are still typically emitting considerably less GHG emissions than their counterpart in the Global North.

Although higher per capital GDPs are generally correlated with higher per-capita transport GHG emissions, the current low level of per-capita emissions in MobiliseYourCity member cities offers the opportunity to leapfrog to more sustainable futures. Tailored Sustainable Urban Mobility Plans and smarter investment initiatives supported by MobiliseYourCity can lead to emissions reduction. Combining efficient public transport and active modes in coordination with land use planning can leverage city members to more sustainable systems.

## Transport related GHG emissions in MobiliseYourCity member cities

*and reference cities*




*The area of the circle is proportionate to the total GHG annual emissions*

# Conducting a rigorous mobility, institutional and financial diagnosis provides decision-makers with the data needed for evidence-based policymaking

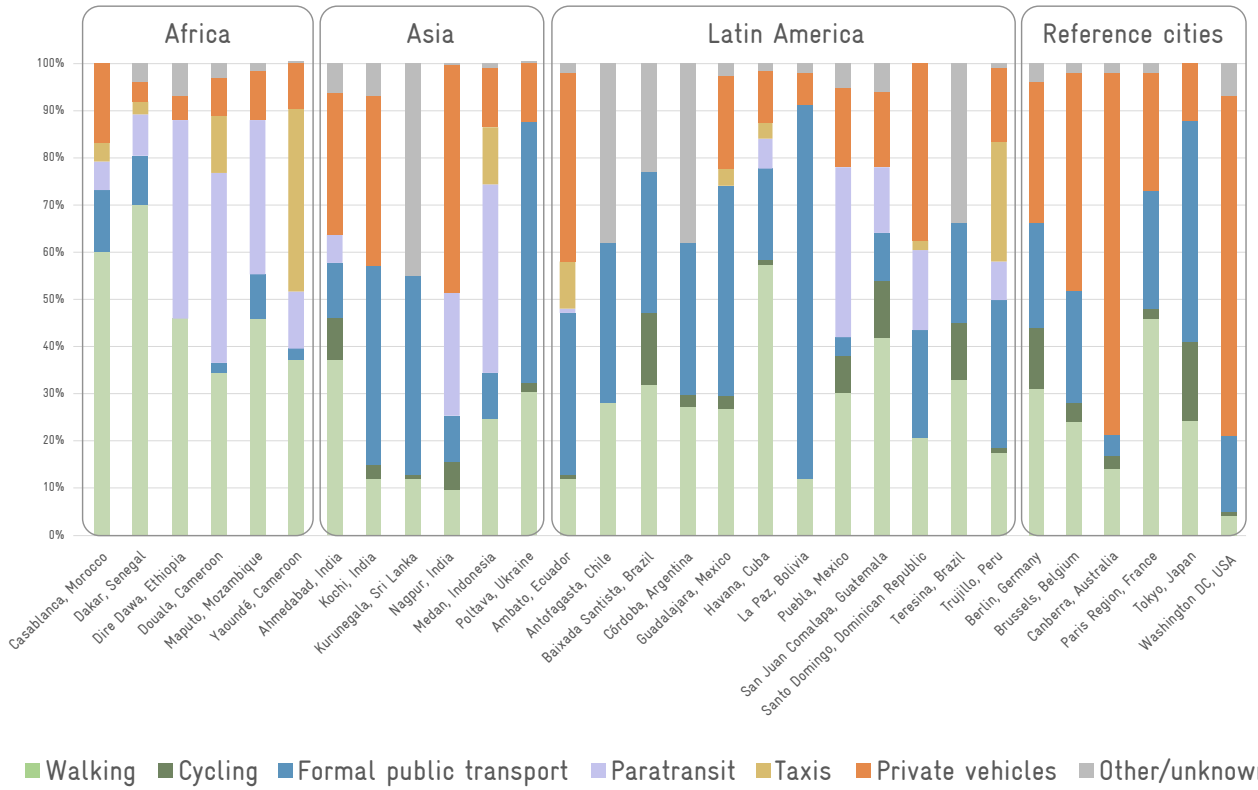
Through the urban mobility diagnosis conducted as an essential phase of every SUMP and NUMP, MobiliseYourCity is helping local and national authorities to close the knowledge gap in order to make informed decisions on how to improve urban mobility. Having a good analysis of the current mobility situation provides the necessary baseline against which any intervention part of a SUMP or a NUMP can be measured. Diagnoses enable to identify opportunities and challenges, and subsequently, strategies for progress toward sustainable mobility. Data-driven decisions are key for enabling impactful measures and projects in mobility, and increasing the impact of sustainable mobility planning in terms of service provision, emissions reductions, road safety, and accessibility, among others.

Mobility diagnostics are particularly critical for modes of transport for which data is scarce, notably paratransit. For example, in Santo Domingo, Dominican Republic, 72% of buses operate at the margin of the law. In other words, the majority of public transport services in the Dominican Republic's capital is informal. In Douala, Cameroon, paratransit services capture 65% of all motorised trips, and the approximately 200,000 Jeepneys operating in the Philippines generate 15.5% of the transport sector's GHG emissions. These figures highlight the importance of a whole area of urban mobility that has been too often neglected. While this sector invariably deserves to be seriously considered in short- and long-term mobility plans, the extreme diversity of modes of transport considered as paratransit requires a different approach for each city, which a SUMP diagnosis can define.

SUMP diagnostics also provide the basis for a goal-oriented urban mobility plan, such as the reduction of greenhouse gas emissions. In Dakar and Antofagasta, for example, emissions inventories have been calculated according to transport modes and vehicle types, giving decision-makers the necessary elements to identify and implement targeted interventions.

## Modal split in MobiliseYourCity member cities

*and reference cities*



# Measures to professionalise paratransit are being included in SUMPs and NUMPs, and these measures are moving to implementation

Paratransit, or informal transport service providers like tuk-tuks, boda bodas, peseros and others, comprise a predominant share of the trips made in the Global South and are responsible for a significant portion of urban transport related emissions. Despite the ubiquity of these informal transport modes, the solutions to the challenge of professionalising their services - including improving safety, upgrading their fleets to lower polluting vehicles, and better integrating them into formal transport systems - remain unintelligible. This is mainly due to the lack of data resulting from the informal nature of these services and the institutional fragmentation of regulating authorities.

Decarbonising paratransit vehicles is essential for greening the entire transport system. Paratransit fleets are found by the tens of thousands throughout cities in the Global South. They are characterised by small scale vehicles fleets, usually highly polluting and in many cases road-unworthy. Many vehicles surpass an age of 15 years. The results: air pollution, GHG emissions, unsafe and uncomfortable operations.

The Philippines NUMP has shown that to electrify paratransit, it needs first to be professionalised and modernised in terms of improved business models, organisation, labour conditions and regulatory frameworks. Currently, paratransit operators lack the knowledge, financial resources, and incentives to become electric. In Santo Domingo, the paratransit sector is experiencing a systematic transformation rather than a substitution, including workers, vehicle owners, and public authorities altogether. 400 “conchos” (informal taxis) have been replaced by 30 buses in the first intervened corridor. This process is delivering parallel efforts to train former concho drivers for bus operations and increase organisational capacities of former concho unions now in charge of public transport services in the bus corridors. The adopted SUMPs in Douala and Yaoundé, and the Tunisian NUMP are also helping to create the ideal conditions through the identification of systemic approaches for paratransit reform and integration.

**“Private vehicles can no longer sustain transport as a backbone. The Philippines National Urban Mobility Policy is anchored on a people first approach, which moves towards an efficient, affordable and economic sustainable urban transport.”**

**Maria Sheilah G. Napalang**
*Philippines, Assistant Secretary for Planning and Project Development Department of Transportation*

# Pilot projects and tactical interventions are an effective, low-cost way of promoting sustainable modes and approaches to planning

From the 10 cities designing and implementing pilot projects, 3 have nearly completed the process. Pilot projects catalyse larger systemic transformations in urban mobility by delivering tactical interventions that enlarge know-how of public authorities and demonstrate the benefits of sustainable mobility in local contexts. These tactical interventions are efficient use of resources and can have a significant positive impact on people's mobility practices and beliefs, which underpin our mobility choices. Pilot projects in the MobiliseYourCity Partnership are particular productive because they are, rather than being isolated measures, part of a larger planning process that considers their enlargement, consolidation, extension, or further development.

In Ibagué, Colombia, EUROCLIMA+ supported in piloting an e-bike sharing system with eight stations, 69 mechanical bicycles and 16 electric-assisted bicycles across the city centre. The strategic objective of the project is to increase the number of residents and circulating populations in downtown using shared bicycles while promoting cycling as a main mode of transportation. While enabling people to move sustainably through their city, the pilot project also builds capacities for sustainable mobility of public authorities.

Another example is the city of Teresina, Brazil that is aiming to reduce the information imbalance for the public transport stakeholders and optimise the infrastructure built for the BRT system through calling to an open innovation challenge. 14 groups participated and three were selected for development of their concept proof. These three selected projects in Teresina will improve data visualization for citizens, enhance performance indicators tracking for bus operators, and develop a software to better plan bus routes.

# While causing implementation delays, the relentless pandemic has also encouraged innovation in data collection

Almost all the ongoing technical assistance projects have experienced delays in collecting data, which is a key step for the diagnosis phase of a SUMP or NUMP. Experts travelling to the cities to work with local officials and data collection continue to be the two aspects most negatively impacted by the pandemic. Nevertheless, MobiliseYourCity members, partners and the consultants supporting them have been adapting and have developed innovative solutions to continue to ensure quality of collected data and continued participatory processes.

In both Havana, Cuba and Baixada Santista, Brazil the diagnosis phase started after the COVID-19 outbreak. To mitigate the challenges in traditional data collection, mobile phone network data was used to complement traditional mobility data. This coupling of two data sources enabled the creation of more realistic baseline data prior to February 2020. The approach helped shape SUMP scenarios with typical mobility patterns not influenced by the disruption experienced during 2020 and 2021 due to mobility restrictions.

Although effective, this strategy created challenges for both the cities and the consultancy firms, who needed to adjust the MobiliseYourCity methodologies to the rapidly-changing situation and find experts in the treatment of innovative digital information for urban mobility planning.

In Medan, during the diagnosis phase, residents were uncomfortable being interviewed in person, especially for a relatively long time. As an alternative, the questionnaires were designed using online tools (such as Open Data Kit) to allow surveyors to collect responses on their mobile phones, avoid direct contact with respondents, and minimise time on data entry. While asking the stated preference and perception survey questions, surveyors filled out questionnaire forms online and recorded them directly in the database.

"The cities of the future are formed by the decisions of today."

**Jamie Leather**
*ADB, Chief of the Transport Sector Group*

# Our data confirms general global trends but also has several limitations

The annual data collection exercise surfaces interesting facts, and illuminates specifics and certain tendencies: per capita GHG emissions are typically much lower in Africa than in Latin America, for example. While most conclusions and recommendations that emerge from the data are in line with most other knowledge sources, there is still some shortcomings in the quality of data due to several reasons, ranging from the quality of the locally available data to the limited access the Secretariat has to certain types of information.

However, the quantity and quality of data has improved significantly since the previous year. A detailed diagnosis is now available for 16 out of the 31 cities that have ongoing or completed SUMPs, compared to 10 in 2021. We also now have detailed modal split data for 32 cities, compared to 26 last year. A strengthened Secretariat and closer communication with the Implementing Partners offers the Partnership a unique opportunity to make the most of this information by using it in trainings, to improve methodological guidance, and to adapt our service offer to the needs of the members.

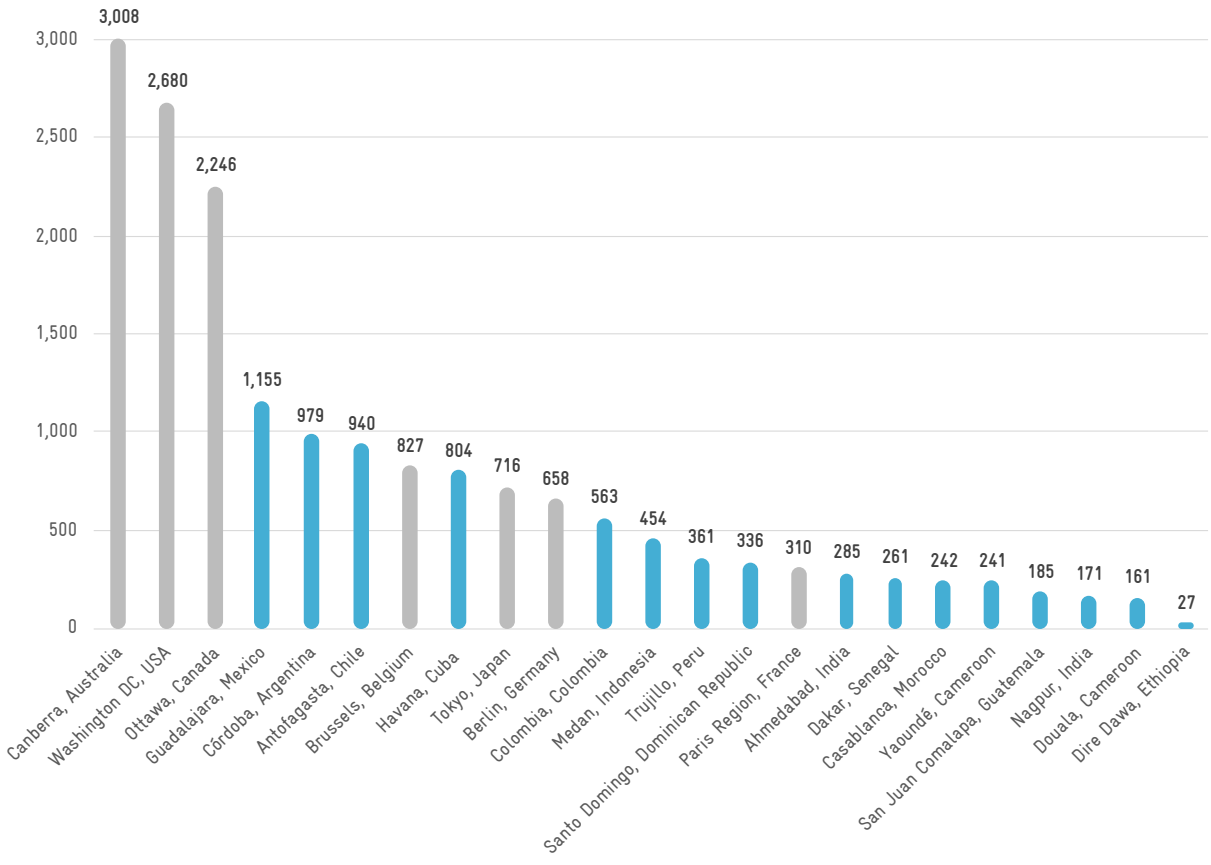
Nevertheless, work remains to be done to gather data and information consistently. For example, we would expect the 21 cities that have ongoing or completed SUMPs to have good data on the 'basic' information that would be collected during the diagnosis phase. However, we only have information from 7 of 21 cities on whether there is an operational transport authority, from 15 about whether these cities can borrow money to finance transport investment, and from 13 on their level of sensitivity to the impacts of climate change.

Also, there are still several obstacles to reporting aggregate information, including the use of standardised units of measurement for indicators such as greenhouse gas emissions, or the categorisation of different modes in the modal split of urban mobility.

Finally, we have a significant data blind spot regarding the mobilisation of domestic public finances. The Secretariat's relative closeness to our Implementing Partners that are also international financial institutions, as well the public availability of information from these organizations, facilitate tracking of international financing. Central government funding for NUMPs is also relatively easy to track because of the fewer numbers. However, use of local public finance for financing SUMPs and NUMPs measures is often more difficult to track in an updated and precise manner.

## Transport related annual emissions per capita (kg $CO_2e$)

*and reference cities*



# 4 Advocacy and outreach: connecting and communicating for a systems' transformation

The adoption of the new MobiliseYourCity strategy in 2020 helped sharpen our outreach and advocacy work. We focused our communication on the dissemination of our knowledge products and trainings to help scale our capacity building activities. We kept advocating for more resources for sustainable transport with a stronger focus on funding the implementation of SUMPs, on specific topics where funding is particularly lacking such as paratransit reform.

# MobiliseYourCity elevated the topic of paratransit on the global agenda

Our work in Africa, Asia and Latin America has revealed the need to urgently reform paratransit to ensure a fair transition to sustainable urban transport. Following the adoption of the new MobiliseYourCity Strategy in December 2020, the Partnership has decided to make this particular topic a priority in 2021.

In 2021, we were able to raise this topic during two major global events as well as during the MobiliseYourCity Paratransit Day, which collectively reached more than 250 people:


## Side event at the UN Sustainable Transport Conference

*15th October, 2021 – Online – 50 participants*

Our side event engaged participants on the role of paratransit for sustainability and produced a document with key points and recommendations for decision-makers to reform paratransit to ensure a fair transition towards low-carbon urban transport in the Global South, based on the insights of the discussion and in co-creation with the audience.

WATCH THE EVENT DOWNLOAD THE RECOMMENDATIONS


## Side event at COP26 EU pavilion

*12 November 2021 – Online and in Brussels, Belgium – Over 100 participants*

During the session, MobiliseYourCity engaged with a youth organization and a European foundation in an intergenerational discussion on how to achieve a just and meaningful transition to sustainable urban mobility. The conversation showcased the diversity of approaches needed in different contexts, from paratransit, active mobility, to access to finance and innovation solutions, and their complementarity.

WATCH THE RECORDING


## Together with our African Community of Practice and our partners Agence Française de Développement and CODATU, we published a Paratransit toolkit on November 29th, 2021.

This toolkit includes an in-depth diagnosis of the sector and an easy-to-use catalogue of 50 practical measures to help local and national governments reform paratransit. In December 2021, only one month after its publication, the Paratransit toolkit already had **620 downloads** thanks to a large communication campaign throughout the Partnership's channels.


## Webinar 'Reforming paratransit with MobiliseYourCity's catalogue of measures'

*29th November, 2021 – Online – Over 100 participants*

MobiliseYourCity organised a webinar to launch the Paratransit Toolkit, presenting the catalogue of measures to reform paratransit and the methodology to conduct a diagnosis. On this occasion, AFD also invited existing donors and other relevant stakeholders to discuss the topic of paratransit and its particular importance to improve urban mobility and address the climate crisis. The meeting offered all stakeholders an occasion to identify concrete ways to join forces and work together on selected projects.

"Paratransit has remained unexplored and under-addressed in the context of climate change. We need to recognise the role that the sector plays as an emitter and to understand its concrete decarbonisation potential."

**Sasank Vemuri**
*MobiliseYourCity Partnership, Coordinator*

# Our member cities and countries are sharing their experiences across multiple platforms to wide audiences

A major part of the Partnership's communication effort is dedicated to inspiring action through local stories from our city and country members. The 2021 Global Monitor, with detailed city and country factsheets has nearly 1,000 downloads. The final reports and summaries of the completed SUMPs/NUMPs from Yaoundé, Santo Domingo, Lviv, and Philippines have collectively had over 1,100 downloads. Articles on 'Insights from practice' from Antofagasta, Medan and Yaoundé were shared with the over 3,000 subscribers to our newsletter.

The Partnership was proud to offer a stage to several of its members in major international forums, through which we were able to reach over 400 people:

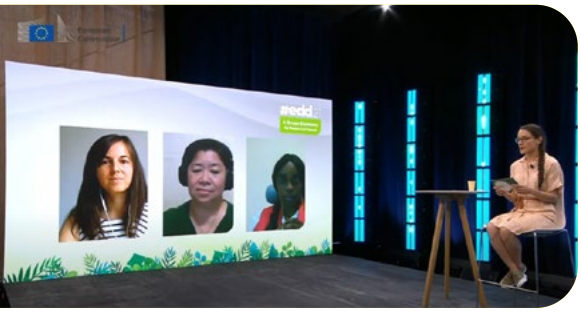
## 1st MobiliseYourCity Global Forum at the Transport and Climate Change Week

*25 June, 2021 – Online and in Berlin, Germany – 100 participants*

For the first time, MobiliseYourCity brought together all its partners in one single event. Experts, practitioners, financing institutions and decision-makers came together during the MobiliseYourCity Global Forum to provide answers to key challenges faced by cities on the way to sustainable mobility.

Representatives from Kumasi, Douala, and the Philippines shared their experiences during the forum.

WATCH THE EVENT



## European Development Days

*15th June, 2021 - Online*

Representatives from Douala, Cameroon and the Philippines, presented how mobility planning helped shape better, more livable cities in their respective countries.

WATCH THE EVENT


## COP 26 UN Climate Change Conference

*1-12 November 2021 – Online and in Brussels, Belgium – Over 300 participants*

At a COP marked by the absence of representation of the Global South, MobiliseYourCity stood out for having represented its member cities and countries and for elevating the issues of importance to them.

The Partnership advocated for an accelerated transition to low-carbon mobility through integrated and smart planning and multi-level cooperation in urban centres in three side events:

'**Climate action in the transport and urban mobility sector**' at the EUROCLIMA+ Pavilion / In collaboration with EUROCLIMA+, SLOCAT, Sustentar, GIZ, LEDS-LAC, and FLACMA.

WATCH THE RECORDING

'**Supporting multi-level cooperation for implementation of transport strategies in NDCs**' at the EU Pavilion / In collaboration with the European Commission, EUROCLIMA+, GIZ, AFD, and SLOCAT.

WATCH THE RECORDING

'**Complementary approaches towards net-zero urban transport**' at the EU Pavilion / In Collaboration with the European Commission, Climate Rally, and FINNOVA.

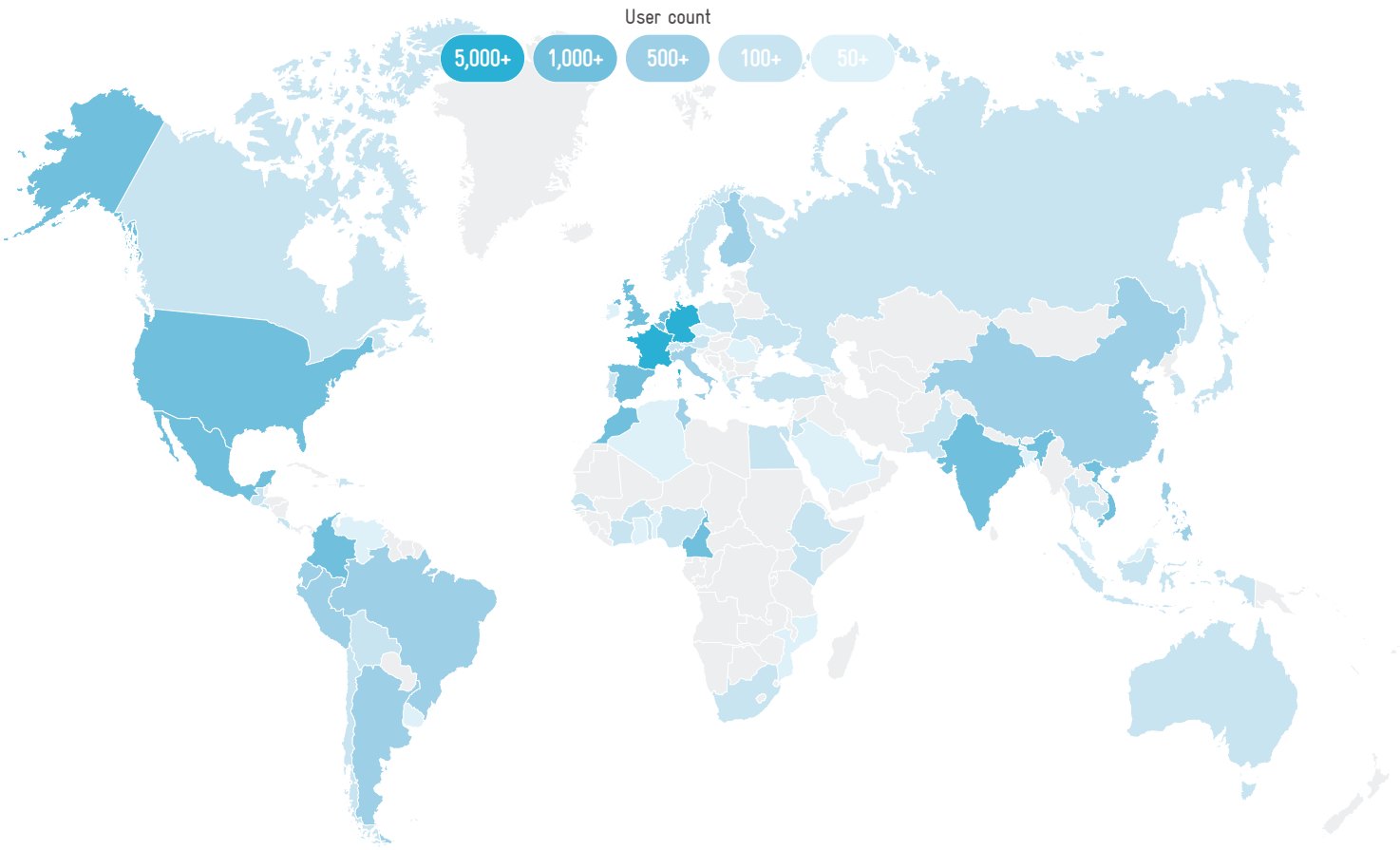
WATCH THE RECORDING

# We disseminated our flagship knowledge products through participation at global events.

# With more than 13,500 downloads of our key knowledge products, our communication is reaching its intended audience

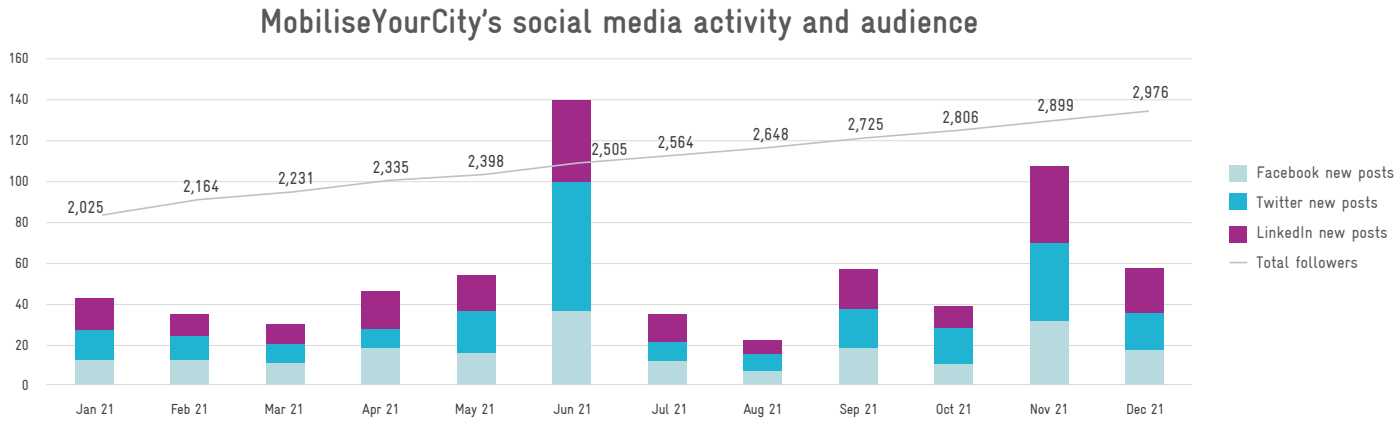
After having produced knowledge products and trainings with our partners and making them available on our Knowledge Platform, we invest a lot of energy into making sure that the right people receive this information. All the products on the platform have been viewed over 300,000 times. We use cross channel communication to generate traffic to our Knowledge Platform and ultimately to ensure the knowledge produced is supporting our member cities and countries in their work. With 1,125 new followers in one year on social media, which represents a 70% increase from 2020, we are creating content that is interesting and relevant for mobility practitioners globally. Compared to last year, we believe that this engagement has led to an increase in participation in our training, in downloads of our communication products, in the views of our knowledge products and in the contributions of new products to our knowledge platform.

## Knowledge Platform users by country and gender





44.96% of total users from January to December 2021




## We continue to promote SUMPs and NUMPs as our core area of work

We advocate for cities and countries to change their approach to transport from a conventional transport planning and engineering approach to a sustainable mobility approach. This shift requires, among other things, to prioritising people's needs to connect to services and other citizens over infrastructure for private motor vehicles, to decarbonise mobility solutions, and to ensure equitable access and affordability of urban services for everyone in a city. We do this by encouraging the enable-avoid-shift-and improve model (EASI) in our SUMPs and NUMPs.

Because we are convinced that this is a successful way of improving urban mobility and decarbonising transport, we advocate for increased resources for technical assistance to scale up this approach to mobility planning and the financial resources to implement the measures that result from it. We do this to help close the investment gap for sustainable mobility.

In 2021, beyond advocating for SUMPs and NUMPs in all our events, we also reached out to support our friends at SMMR with examples and experiences from the Partnership for the ASEAN SUMP Guidelines, which were a key part of the ASEAN Phnom Penh Declaration on Sustainable Mobility.

## We build new partnerships to animate ambitious action and resource sustainable mobility

In July **MobiliseYourCity joined the Cities Climate Finance Leadership Alliance**, a coalition of over 70 leaders committed to deploying finance for city-level climate action at scale by 2030 to help close the investment gap for urban transport.

By joining the Alliance, MobiliseYourCity intends to channel up-to-date information and resources for climate finance to cities, and above all, hopes to influence global players to make urban transport a priority. This new partnership should help MobiliseYourCity continue to facilitate the instrumental dialogue between financial and technical cooperation.

In September, **MobiliseYourCity signed the pledge for DigitalTransport4Africa** to help build digital commons and apply the Digital Principles of Development to the goals of Sustainable Urban Mobility and Access.

DigitalTransport4Africa is a collaborative digital commons and global community that scales up and supports urban mobility projects through open data and peer to peer knowledge sharing. By signing their pledge, MobiliseYourCity committed to sharing and leveraging open, standardised public transport data for all modes.

# 5 Behind the scene: the life of a Global Partnership

## Two cities and one new Knowledge and Network Partner joined MobiliseYourCity in 2021

Yerevan, Armenia and Nouakchott, Mauritania have officially joined the Partnership, expanding our thematic expertise and geographic spread.

The Global Partnership for Informal Transportation also joined the MobiliseYourCity Partnership as a Knowledge and Network Partner. They are strengthening the Partnership's offer on the topic of paratransit with their expertise and a network of professionals dedicated to the issue.

We are now nearly 100 partners strong, with 65 member-cities and 15 member-countries from the Global South.

"MobiliseYourCity is an excellent example of how coordinated European efforts can achieve significant impact."

**Dr Ingrid Hanhoff**
*Emissions Control, Safety of Plants, Transport, Chemical Safety and Environmental Health, BMUV*

## The German Ministry of Environment passed on the role of Chair of the Steering Committee to the Agence Française de Développement

After two years chairing the Steering Committee Meeting, the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) passed on the baton to the Agence Française de Développement (AFD) during the 10th Steering Committee Meeting. During BMUV's time as the chair, the Partnership has brought forward a new strategy focused on implementation, and continued to grow in terms of members as well as resources on the knowledge platform. BMUV will continue to support MobiliseYourCity member countries like the Philippines, Thailand and India through different projects towards decarbonising transport.

As the new chair, AFD has expressed its intention to support the Partnership's efforts on the following priority topics, identified in the strategy adopted in 2020: active modes of transport, governance, and paratransit.

AFD has also allocated funds to be able to support at least three positions in the Secretariat until end of 2023.

## MobiliseYourCity partners strengthened their ties to improve services to members

In 2021, MobiliseYourCity partner organisations facilitated knowledge and experience sharing among themselves and coordinated their efforts with a view to improve the Partnership's services to city and country members.

Voting members maximised the structures of the Partnership such as the Steering Committee meetings taking place every six months to make it a platform for exchange and alignment among themselves. They have used this space to share their actions and discuss about possible ways to collaborate more closely.

Taking advantage of an easing in the COVID-19 situation, new members of the Secretariat were finally able to meet with key partners in GIZ Changing Transport Team in Bonn and CODATU in Lyon. Members of the Secretariat were also invited to take part in an internal AFD training on sustainable urban mobility that allowed them to better understand AFD's work on the ground.

**"Mega cities require mega collaboration. The entire financial system – public, private and philanthropic – must work together to reach our sustainable, urban future."**

**Barbara Buchner**
*Global Managing Director of the Climate Policy Initiative, during the 1st MobiliseYourCity Global Forum*

## MobiliseYourCity animates ambitious action on sustainable transport across various groups

The secretariat remains active in various groups and taskforces to advocate on behalf of MobiliseYourCity members. These include the Marrakesh Partnership for Global Climate Action, the Eltis SUMP Platform Coordinating Group, the SLOCAT Task Force on Transport Community Engagement in the UNFCCC, and the Movin'On LAB Africa Steering Committee.

The Secretariat was glad to see some concrete results from these various engagements and from our active promotion of the Partnership's knowledge products. We have noticed references to some of our key knowledge products by institutions outside our community of partners (for instance, EIB/Jaspers presented a slide showing relevant resources for climate change mitigation through SUMPs which indicated MobiliseYourCity products during the Eltis meeting on SUMPs in October 2021) as well as were glad to notice some of the focus topics of the Partnership becoming more prominent in the projects of our key partners.

## Four new people joined the Secretariat

Four new professionals have joined the team in 2021: Elena Tanzarella, Junior Communications Officer, Verena Knöll, Associate Mobility Expert, Julia Nolte, Capacity Building Intern, and Nicolas Cruz, Sustainable Mobility Expert.

They joined Sasank Vemuri, Coordinator of the Partnership and head of the Secretariat, Eleonore François-Jacobs, Partnerships and Outreach Manager, Mateo Gomez, Associate Mobility Expert, Vincent Larondelle, Monitoring and Evaluation Manager and Julien Ferdinand, Communications Manager, who had joined the Partnership in 2019 and 2020.

This expansion has been made possible thanks to funding from AFD and BMUV.

**We work together as partners to shape low-carbon mobility systems that contribute to economically vibrant, safe, and just cities for all urban residents of today and the future.**

# 6 Looking forward: supporting the implementation of SUMPs

## MobiliseYourCity prioritises governance and active modes

The new strategy for MobiliseYourCity adopted in 2021, which identified a new service area and thematic priorities, has been effectively guiding the collaborative actions of the Partnership.

In 2021 MobiliseYourCity has made special efforts to develop tools and methodologies for paratransit and to put the new service area 'implementation support' into practice.

Priority topics for 2022 will be governance and active modes. These two topics are fundamental to ensure the transition from planning to successful and sustainable implementation as well as long-term decarbonisations of urban mobility.

Active modes – walking in particular - represent a very large modal share in many MobiliseYourCity member cities and countries. They are typically considered as the purvey of the poor. With the exception of a few cities, particularly in Latin America, active modes are rarely promoted or invested in by local authorities. Most cities indeed lack the infrastructure and design to make walking and cycling safe and comfortable. Active modes of transport, however, play a crucial role in achieving net zero emissions transport systems. In principle, these modes of transport are the most sustainable, and they have significant benefits for human health. MobiliseYourCity noticed from the first SUMPs and NUMPs adopted that infrastructure for active modes often represent too small amounts to attract external financiers and therefore decided to prioritise this topic to encourage its systematic inclusion in larger implementation projects.

**"Walking and cycling cities are cities of the future. If we think about gender, climate change and all the other issues of our times we need to invest in these modes to contribute to a solution."**

**Aimee Gauthier**
*ITDP, Knowledge Director*

# Active modes of transport and SDGs

## 1 NO POVERTY

**End poverty in all its forms everywhere**

Targets

1.41 - By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services.

Access to basic services is limited for millions of people globally due to a lack of mobility options. More than a billion people walk or cycle for more than 55 minutes every day in Africa - to reach work, home, school, and other essential services (Walk 21). Many millions more who do use transport services spend a large part of their income on transport. In Nairobi, Kenya the urban poor spend up to 30% of their household income on transport (UN-Habitat, 2014).

Investments in low-cost methods of accessing transport are critical for reducing poverty. Walking and cycling are affordable and simple modes of transport, facilitating access to jobs, markets, education, and healthcare in urban and rural settings.

## 3 GOOD HEALTH AND WELL-BEING

**Ensure healthy lives and promote well-being for all at all ages**

Targets

3.6 - By 2020, halve the number of global deaths and injuries from road traffic accidents

Target 3.9 - By 2030 substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution contamination

Pedestrians and cyclists are the most vulnerable group of road users with high exposure to road accidents and air pollution. Almost half of road traffic fatalities involve pedestrians, cyclists, and users of two-wheelers (WHO, 2009) making it the seventh-highest cause of death in low-income countries. Similarly, outdoor air pollution was estimated to cause 4.2 million premature deaths in 2016 out of which 91% occurred in low and middle-income countries (WHO, 2021).

Promoting active transport modes could contribute to reducing traffic accidents and ensure the good health and well-being of citizens. Increasing the number of walkers and cyclists can reduce the likelihood of traffic accidents in urban environments (Jacobson, P.L 2015). Study conducted in Accra Ghana, indicates scaling up active mobility, could save up to 5,500 premature deaths with improvements to air quality (WHO).

## 4 QUALITY EDUCATION

**Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

Targets

4.5 - By 2030, eliminate gender disparities in education and ensure equal access to all including persons with disabilities, indigenous peoples and children in vulnerable situations

Higher transport costs are a major barrier to education in various countries, specifically for women. In Yemen, girls attend village schools within walking distance from their homes, but few girls pursue higher education due to the high cost or the lack of socially acceptable transport. Motorised trips for women are higher in most low-income countries, women pay 50% more than men to access education because they depend on the expensive and covered mode of transport (Clarke, M., 2012).

Urban environments that support active travel modes for complete or partial trips in combination with public transport have the potential to eliminate physical and financial barriers to acquiring education (Kenyon, 2011).

## 8 DECENT WORK AND ECONOMIC GROWTH

**Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

Targets

8.4 - Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation

Road congestion imposes a severe burden on the economies across all geographies. In Asian economies, an estimate of 2%-5% of GDP is lost annually due to time loss, resource wastage, and increased transport costs (Asian Development Bank). In Lagos, Nigeria, residents lose 3 billion hours at the cost of US$ 1 billion annually only due to road congestion (World Bank, 2021).

Congestion could be tackled by investing in active modes of travel as cyclists and pedestrians only occupy one-third and one-sixth of road space in comparison to private vehicles (GTZ, 2003). Moreover, investment in active mobility infrastructure could positively impact the economy with increased retail activities, food sales and employment opportunities (Garrett-Peltier, H.2010).

Graphic continues on the next page

# Active modes of transport and SDGs

## 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

**Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation**

**Targets**

**9.1 -** Develop quality, reliable, sustainable and resilient infrastructure

**9.a -** Facilitate sustainable and resilient infrastructure development in developing countries through enhanced FA and TA acilitate sustainable and resilient infrastructure development in developing countries through enhanced FA and TA

Despite heavy reliance on active mobility as the primary mode of transport, the quality of infrastructure for walking and cycling across many developing countries is questionable. In Lagos, Nigeria, at least 40% of trips are made by walking, yet the infrastructure is poorly provided and perceived to be of little relevance for addressing the city's mobility challenges (GIZ, 2018). In Tanzania, the sidewalks are generally unpaved, which leads to pedestrians walking on the road instead (Brunn et al, 2016).

High rates of active travel in low and middle-income countries (LMICs) reflect the need to retain active transport as a mode and investments in safe, resilient, and high-quality infrastructure could support sustainable economic development and human development well-being (World Bank, 2021).

## 11 SUSTAINABLE CITIES AND COMMUNITIES

**Make cities and human settlements inclusive, safe, resilient and sustainable**

**Targets**

**11.2 -** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations

Poorly planned cities tend to limit inhabitants from accessing safe, affordable, and reliable transport systems. Only half of the world's population is living within 500 meters walking distance of transport systems (buses or trams) and within 1,000 meters of high-capacity transport (trains or ferries) according to 2019 data (UN SDG Report 2021).

Financing active transport has a strong potential to improve accessibility and connectivity as a stand-alone mode and in combination with public transport. Walking is already a primary transport in Nairobi, Dar es Salaam, Cape Town, and Santiago, constituting 73.7%, 70.3%, 46.7%, and 34.5% of all trips undertaken daily (Mitullah, Winnie V, 2016) whereas cycling expands access to jobs, schools, and other destinations by 15 times compared to walking (ITDP).

## 13 CLIMATE ACTION

**Take urgent action to combat climate change and its impacts**

**Targets**

**13.2 -** Integrate climate change measures into national policies, strategies and planning

The transportation sector is the highest contributor of GHG emissions globally with light-duty vehicles (cars and vans) contributing a share of 80% emissions (IPCC, 2014). In the Latin America and the Caribbean (LAC) region, 35% of emissions come from fuel combustion from transport- much higher than the global average of 22% (World Bank).

Investing in active modes of transport is more important than ever to fight climate change. Cities with over 55% share of walking, cycling and public transport emit 2.4 fewer tones of CO2 emissions annually from passenger transport (UITP, 2006). Developing compact cities (for walking, cycling, and public transit) together with vehicle electrification is the only way forward to limit future global warming to less than 2 °C (The compact city scenario-electrified, ITDP).

## 17 PARTNERSHIPS FOR THE GOALS

**Strengthen the means of implementation and revitalize the global partnership for sustainable development**

**Targets**

**17.3 -** Mobilise additional financial resources for developing countries from multiple sources

Although the benefits of walking and cycling are acknowledged and active mobility has become a prominent element in the international development agenda, funding is still a major obstacle in consolidating active mobility initiatives in the Global South (World Bank, 2021).

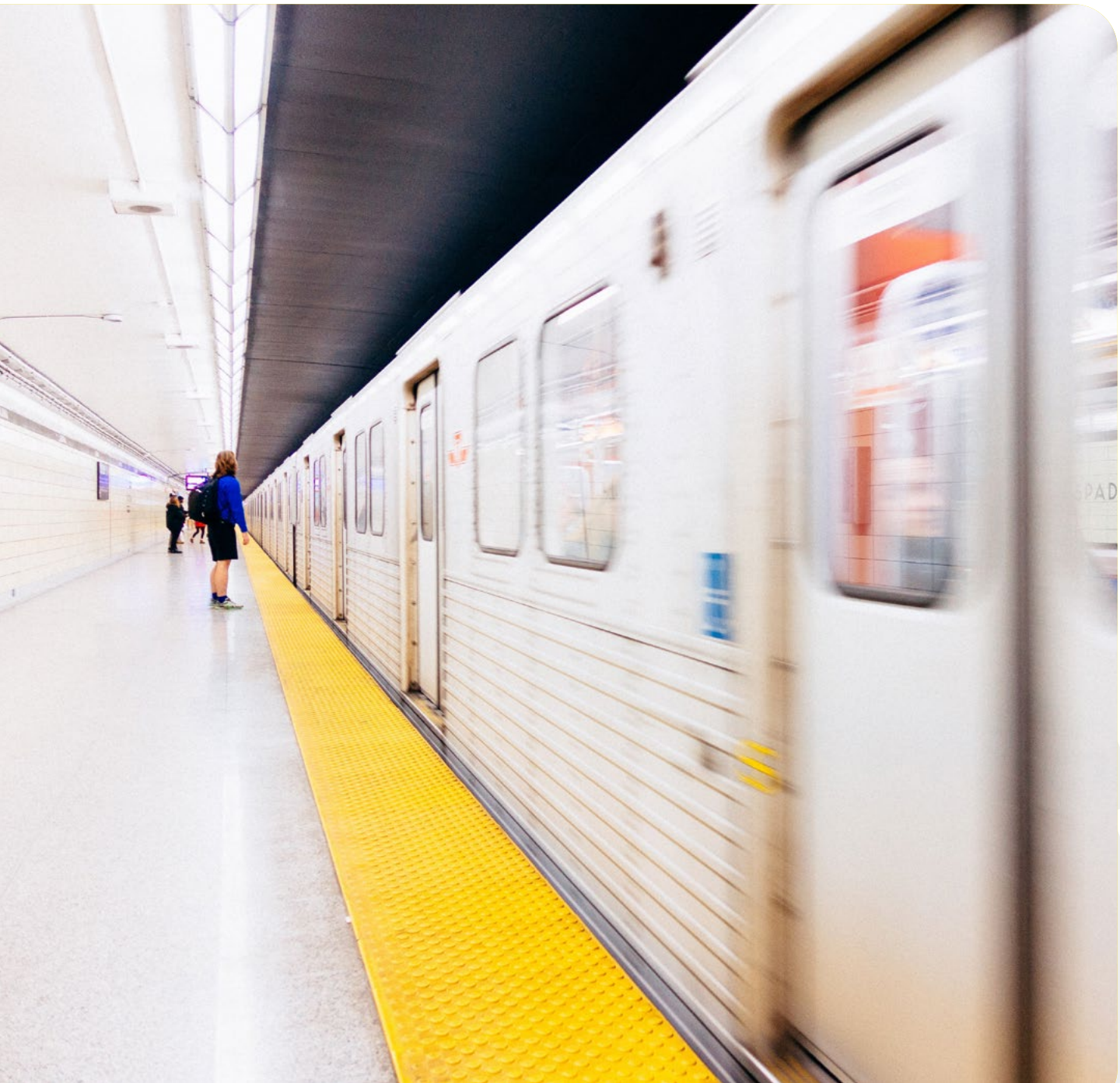
Setting 20% of the transport budget for active mobility, like Nairobi has done at the local and national levels respectively, is the most straightforward way to fulfill active mobility goals in a sustained form (World Bank, 2021).

The World Bank (2020) has estimated that investing US$300 million for a 1,173-kilometer bicycle network for Lima, Peru can support more than a million trips per day, like the actual ridership of the metro line 1 and the BRT systems combined.

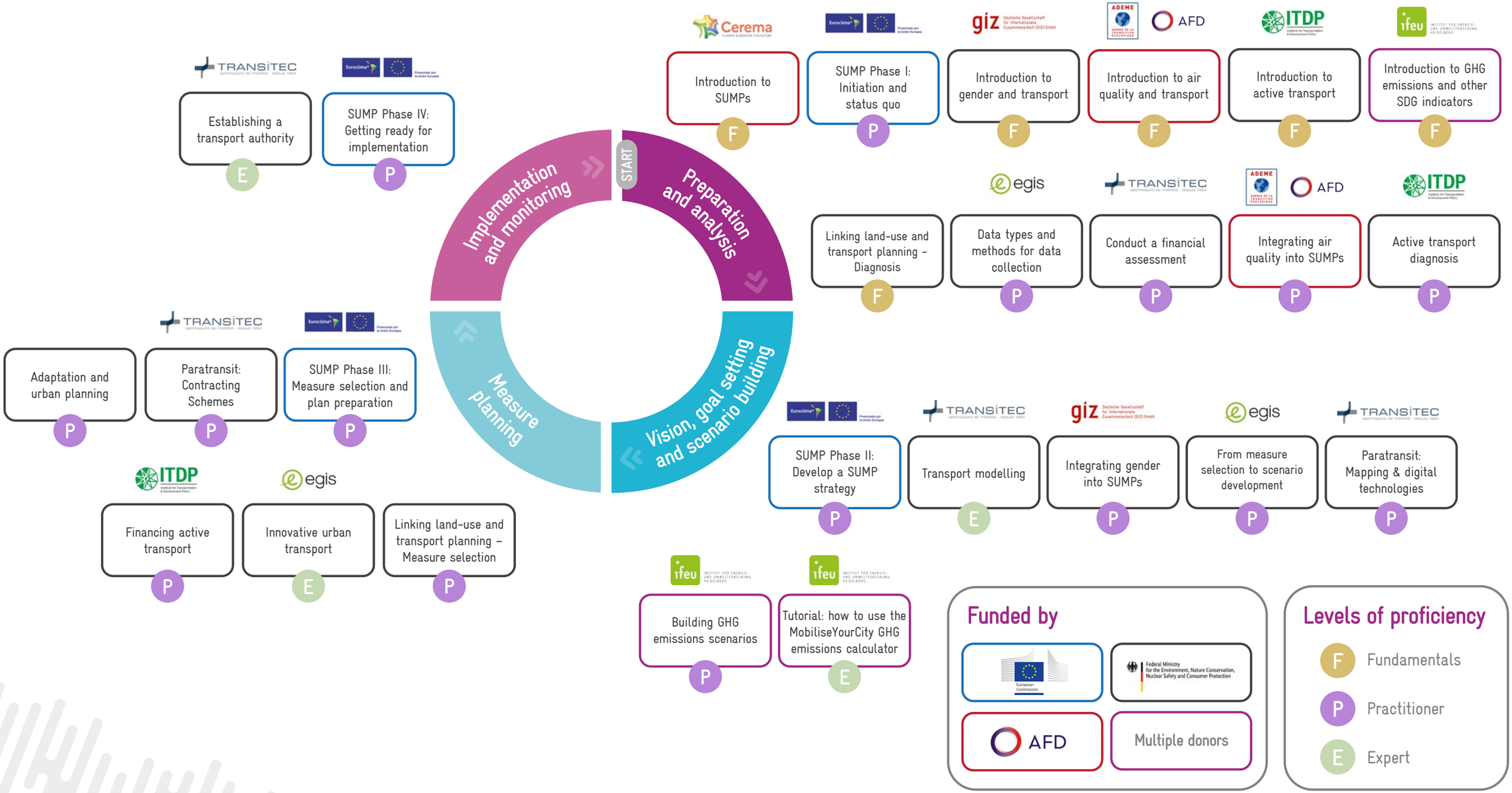
# We await a series of additional resources to scale up capacity development

With plenty of implementation experience to draw from, the MobiliseYourCity SUMP guidelines will finally be published this year. They will build on the experience of the first completed SUMPs of MobiliseYourCity, and include a particular focus on paratransit, active modes and participatory processes.

In order to scale up capacity building, the Partnership is preparing training materials on all the topics covered in our strategy. These training materials will include everything a trainer needs to organise a training, from PowerPoint presentations to exercises and additional resources for participants. As with all our methodological work, the objective of these training materials is to achieve an efficient way of scaling resources that can help build capacities globally.



# MobiliseYourCity's training materials along the SUMP cycle



# Our partners are growing and remain more than ever committed to achieving ambitious action

With the first results confirming the intuition which led to the creation of MobiliseYourCity, the Partnership is more than ever committed to empower cities across the world to take ambitious action to transform mobility. Our partners keep learning from the projects on the ground and building on each other's strengths to continuously improve the Partnership's offer to its member cities and countries. We are looking forward to expanding our collaboration with new partners in 2022.

"In our time as chair, we want first to make sure that the new service area of the Partnership – Implementation support – which was added in the strategy adopted in December 2020, is really implemented. This means leveraging additional finance to develop ad hoc projects on paratransit modernisation, support to active modes, support to governance, and developing methodologies and best practices."

**Lise Breuil**
*Head of the Transport and Mobility Division at AFD*

# 7 City and Country Factsheets

The MobiliseYourCity Partnership has 65 partner cities and 15 partner countries. Our Implementing Partners are supporting 31 cities and 9 countries in preparing SUMPs and NUMPs respectively.

**31** Supported SUMPs

**9** Supported NUMPs

# The MobiliseYourCity Global Partnership

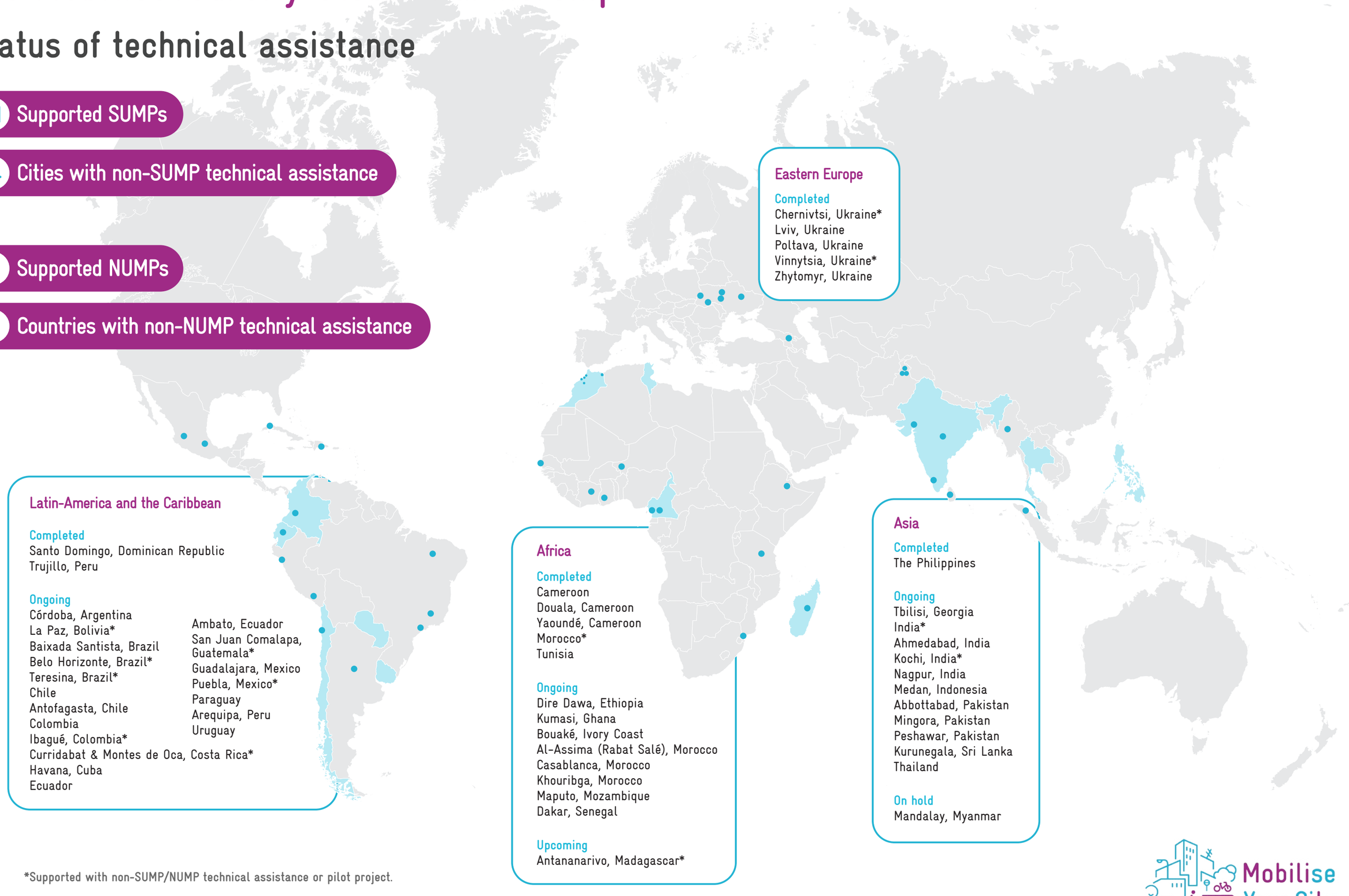
## Status of technical assistance

**31** Supported SUMPs

**14** Cities with non-SUMP technical assistance

**9** Supported NUMPs

**2** Countries with non-NUMP technical assistance



### Latin-America and the Caribbean

**Completed**
Santo Domingo, Dominican Republic
Trujillo, Peru

**Ongoing**
Córdoba, Argentina
La Paz, Bolivia*
Baixada Santista, Brazil
Belo Horizonte, Brazil*
Teresina, Brazil*
Chile
Antofagasta, Chile
Colombia
Ibagué, Colombia*
Curridabat & Montes de Oca, Costa Rica*
Havana, Cuba
Ecuador
Ambato, Ecuador
San Juan Comalapa, Guatemala*
Guadalajara, Mexico
Puebla, Mexico*
Paraguay
Arequipa, Peru
Uruguay

### Eastern Europe

**Completed**
Chernivtsi, Ukraine*
Lviv, Ukraine
Poltava, Ukraine
Vinnytsia, Ukraine*
Zhytomyr, Ukraine

### Africa

**Completed**
Cameroon
Douala, Cameroon
Yaoundé, Cameroon
Morocco*
Tunisia

**Ongoing**
Dire Dawa, Ethiopia
Kumasi, Ghana
Bouaké, Ivory Coast
Al-Assima (Rabat Salé), Morocco
Casablanca, Morocco
Khouribga, Morocco
Maputo, Mozambique
Dakar, Senegal

**Upcoming**
Antananarivo, Madagascar*

### Asia

**Completed**
The Philippines

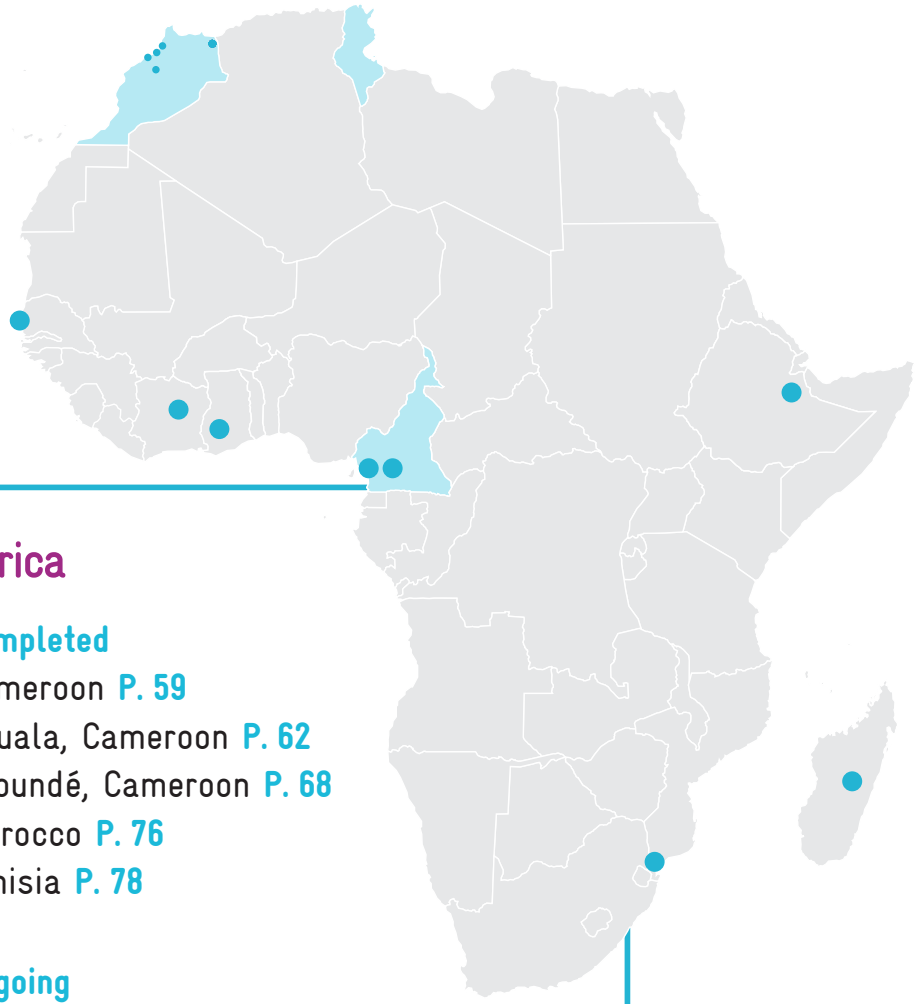
**Ongoing**
Tbilisi, Georgia
India*
Ahmedabad, India
Kochi, India*
Nagpur, India
Medan, Indonesia
Abbottabad, Pakistan
Mingora, Pakistan
Peshawar, Pakistan
Kurunegala, Sri Lanka
Thailand

**On hold**
Mandalay, Myanmar

*Supported with non-SUMP/NUMP technical assistance or pilot project.

Mobilise Your City

# Africa



## Africa

### Completed



### Ongoing



### Upcoming

# Cameroon

Partner city

Status of the project: **completed technical assistance**


## Basic Information

Population: **27,744,989** | Growth rate: **2.54%**

Percent of urban population: **57%**

GDP per capita: **USD 1,498**

Percentage of the population living below the national poverty lines: **69%**

Nationally Determined Contribution (NDC): **no quantified transport related NDC**

National GHG emissions per capita: **0,4 ($tCO_2eq$)**

Proportion of transport related GHG emissions: **53%**

Exposure to climate change: **HIGH**

## Context

Cameroon is undergoing a rapid population growth. With over 55% of the population living in cities, it is the most urbanised country in Central Africa, and it is expected that the urban population will reach 22 million by 2035. The geographical, economic, and social context of the country is complex and diversified but is largely dominated by two major cities, Douala, economic capital and Yaoundé, administrative capital.

Yet the quality and efficiency of urban mobility systems, and ultimately its performance, is not satisfactory. Growing congestion in cities and the unpredictability of traffic are the most visible signs of these problems. The slowness, cost and discomfort of, mostly informal, public transport also greatly affect populations who have no other choice for their journeys. Walking is particularly neglected in Cameroonian cities. The high number of accidents and victims, often pedestrians, calls for emergency measures. Finally, Cameroon's greenhouse gas emissions from urban transport, although very low in absolute terms, could be better addressed.

Generally speaking, and with the notable exception of Douala, urban communities have neither the institutional nor the human resources to carry out some of the essential tasks entrusted to them by law, in particular the organisation and management of public transport and traffic management. Urban communities also do not fulfil their role of continuous monitoring of urban mobility, its performance and the service provided to citizens by urban transport infrastructure and systems

In this context, and as Sustainable Urban Mobility Plans were being developed for Douala and Yaoundé, it appeared necessary for Cameroon to have a National Urban Mobility Policy (NUMP) that facilitates and guides local actions and is shared and appropriated by all actors, whether at the level of cities or the State.

The NUMP was delivered and presented in September 2019 during the MobiliseYourCity Africa Mobility Conference organized in Yaoundé.

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Program (NUMP)

**Type of NUMP:** Policy NUMP

**Funded by:** European Union

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the MobiliseYourCity Africa Program

**Local counterpart:** Ministère de l'Habitat et du Développement Urbain

**Main purpose of the NUMP:** Offer cities a general enabling framework for SUMPs

**Objectives:**

The NUMP for Cameroon provides guidance and actions recommendations focusing on four main targets:

- Reinforcement of urban mobility governance;
- Increase of financing resources for urban mobility;
- Restructuration and modernization and public transport;
- Better use of state-of-the-art technologies for transport.

# Status of implementation

**Project start:** 2018 Q1

**Project completed:** 2019 Q3

**Completed outputs:**

- National Urban Mobility Policy: Diagnosis, national vision, and strategic measures for its realisation

# NUMP key measures and cost estimates

The following list highlights the most significant measures and recommendations identified in the NUMP.

1. Strengthen the governance of urban mobility
   i. Strengthen the capacity of urban communities
   ii. Better integrate the activities of all urban mobility stakeholders
   iii. Strengthen MINHDU
   iv. Develop human resources and capacities at all levels
   v. Develop governance tools
   vi. Develop an approach for the metropolitan governance of urban governance of urban mobility
2. Improve the financing of urban mobility
   i. Increase planning and spending capacities of urban communities on urban mobility
   ii. Strategic area: The State must continue to finance urban mobility while optimising its contributions
3. Restructure and modernisation of public transport
   i. Introduce in Yaoundé and Douala strong public transport axes by bus, starting with the congested roads
   ii. Organise and professionalise the motorbike taxi sector by building on existing structures to drive organisation
   iii. Organise and professionalise taxi services in the main cities and encourage the development of new taxi services
4. Better use of transport technologies
   i. Gradually improvie the vehicle fleet
   ii. Improve road maintenance technologies
   iii. Develop knowledge of the issues and institutional capacities in the digital field, and promote pilot projects

# Highlights

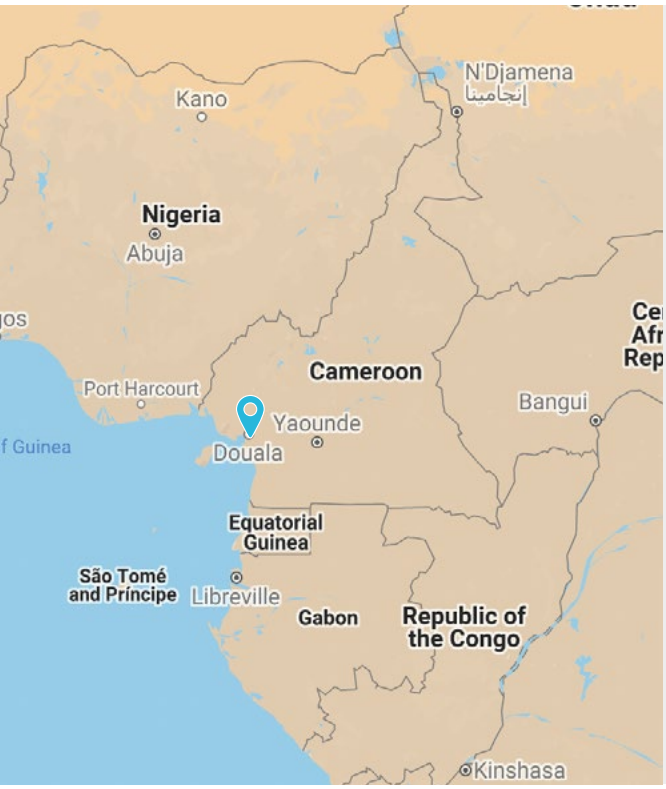
## 66 million euros of external debt gets converted into investments for urban mobility in Yaoundé

Cameroon has benefited from a financial debt reduction mechanism (C2D financing) which allows AFD to return repayments in the form of subsidies for urban mobility. This mechanism has enabled to mobilise 66 million euros for the “Yaoundé Coeur de Ville” project, a priority road shaping investment project integrated into the Yaoundé SUMP. This project provides for the development of 3 major road intersections, with 2 bus stations and the inclusion of public transport, as well as pedestrian areas linked to the urban environment, including 2 markets.

# Douala, Cameroon

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **923 km$^2$**

Population: **3,663,227** | Growth rate: **3.6%**

GDP per capita: **USD 2,952**

Modal Share

- **Minibuses (paratransit): 1%**
- **Walking: 35%**
- **Private cars: 5%**
- **Private motorbikes or 2-wheelers: 4%**
- **Taxis (paratransit): 12%**
- **Moto taxis (paratransit): 40%**
- **Other: 3%**

National GHG emissions per capita: **0.4 ($tCO_2eq$)**

*Region capital city*

## Context

The port City of Douala, the main economic hub of Cameroon, lies on a low coastal plateau, with many natural drains and flood prone valleys. With a population of more than 3.6 million inhabitants, which is expected to increase to 4 million by 2023, Douala is a dynamic, fast-growing city. Douala's rapid growth is particularly pronounced on the outskirts, where the access to formal public transport services is very low or non-existent. Urban sprawl is forcing people to travel further distances to access jobs, markets, health, and education. The low quality and inadequacy of infrastructure for walking and cycling adds up to the low provision of public transport services.

This combination of factors pushes travellers to rely on informal motorcycle taxis and mini-bus services, instead of more sustainable modes such as walking, cycling and higher capacity public transport. Informal transport services have taken an increasingly large modal share in outskirt areas but also in the city centre. This entails threats to the citizen health, safety, and comfort, as the precariousness of working conditions and high competitiveness of paratransit services are associated with higher risk of traffic accidents and sexual harassment toward women. Aging or badly maintained vehicles also lead to a significant increase in air and water pollution, and in greenhouse gas emissions.

Regulating and supervising urban development are major challenges for the public authorities, as a large percentage of the urban territory is subject to unsanctioned land use, associated with the isolation of working-class neighbourhoods, the lack of tertiary roads, saturation of industrial zones and growing informal settlements on often unsuitable land.

In addition to this, the lack of dialogue between the land-use planning, on the one hand, and mobility planning authorities, on the other, exacerbates the urban transport problem. Above all, it is necessary to create the conditions for a viable integration between urban and transport planning. This diagnosis was translated into the need to initiate a planning approach that is more operational than those previously at work, in order to be able to respond to the challenges resulting from the rapid development of the metropolitan areas.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Commission and FFEM

**Funding amount:** EUR 400,000

**Implemented by:** AFD through the MobiliseYourCity Africa Program

**Local counterpart:** Urban Community of Douala

**Finance leverage:** EUR 422,000,000

**Supported activities:**

- Organization of Mobilise Days, in conjunction with Yaoundé, to officially launch SUMP development and raise awareness.
- Preparation of a Sustainable Urban Mobility Plan for Douala, with three main objectives:
  - Improving citizens' access to destinations, activities and services offered in Douala;
  - Improving the urban environment in Douala;
  - Renewing the governance of Douala, its mobility, and projects

# Status of implementation

**Project start:** 2018 Q1

**Project completion:** 2019 Q3

**Completed outputs:**

- Sustainable Urban Mobility Plan
  - Diagnosis
  - Vision and goals
  - Action and financing plan

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measures | Cost estimates in M€ | Proposed Financing Source | Implementation by |
|---|---|---|---|
| **Physical investments (infrastructure, rolling stock, etc.)** | **508 M€** | | |
| Road infrastructure projects | **107 M€** | Domestic financing | 2021 |
| Purchase of 283 Bus 12m<br>2021: 150<br>2024: 133 | **66 M€**<br>2021: 33 M€<br>2024: 33 M€ | World Bank & Domestic Financing | 2021<br>2024 |
| Bus facilities (stations) | **24 M€**<br>2021: 4 M€<br>2024: 20 M€ | World Bank & Domestic Financing | 2021<br>2024 |
| Purchase of 164 BRT 18m<br>2021: 50<br>2024: 75<br>2029: 39 | **66 M€**<br>2021: 20 M€<br>2024: 30 M€<br>2029: 16 M€ | World Bank & Domestic Financing | 2021<br>2024<br>2029 |
| BRT facilities (stations) | **92 M€**<br>2021: 18 M€<br>2024: 49 M€<br>2029: 25 M€ | World Bank & Domestic Financing | 2021<br>2024<br>2029 |
| Cable Car line | **26 M€** | World Bank & Domestic Financing | 2024 |
| Development of 5 major multimodal interchange centre and 15 transfer points | **15 M€**<br>2021: 4 M€<br>2024: 6 M€<br>2029: 5 M€ | World Bank & Domestic Financing | 2021<br>2024<br>2029 |
| Walking plan | **15 M€**<br>2021: 3 M€<br>2024: 7 M€<br>2029: 5 M€ | World Bank & Domestic Financing | 2021<br>2024<br>2029 |
| Investments for cycling | **5 M€**<br>2024: 1 M€<br>2029: 4 M€ | World Bank & Domestic Financing | 2024<br>2029 |
| Reinforcement of river links to Manoka | **4 M€** | Domestic financing | 2021 |
| Development of river and rail transport infrastructure | **5 M€** | Domestic financing | 2029 |
| Centralised Control Centre | **10 M€**<br>2021: 3 M€<br>2024: 4 M€<br>2029: 3 M€ | World Bank & Domestic Financing | 2021<br>2024<br>2029 |
| Project management, call for interest and contingency provision | **63 M€**<br>2021: 15 M€<br>2024: 37 M€<br>2029: 11 M€ | Domestic financing | 2021<br>2024<br>2029 |
| Development of logistical hubs and truck parking spaces | **11 M€**<br>2024: 7 M€<br>2029: 4 M€ | Domestic financing | 2024<br>2029 |

| | | | |
|---|---|---|---|
| **Complementary actions and policy reforms in three phases** | **38 M€**<br>2021: 10 M€<br>2024: 10 M€<br>2029: 38 M€ | | |
| **Technical (studies, plans, designs, etc.)** | | | |
| Short term complementary studies and strategy setting | | | 2021 |
| Guidelines for logistics platforms and trucks parking | | | 2021 |
| Concerted plans and strategies for<br>• upkeep and maintenance of the road network<br>• valorisation/distribution of the public space<br>• Tariff and ticketing of public transport | | | 2021 |
| Integration of mobility and other urban networks (water, sewage, energy, waste) | | | 2024 |
| Municipal traffic and parking plans | | | 2024 |
| Anticipation of future plans after the SUMP | | | 2029 |
| **Policy & regulation** | | | |
| **Informal transport project**<br>Continuous formalisation of moto-taxis and informal buses through the establishment of a new institution responsible for vocational training, schedules regulation, the administrative formalisation. | | European Union | 2024 |
| Implementation of **digital action plan**<br>• Open data policy<br>• Support to development of information and service platforms<br>• Mobility Observatory | | | 2024 |
| Strengthening the capacity of police officers in relation to mobility | | | 2024 |
| Adaptation of public transport service and recruitment policy to tackle gender-related issues | | | 2024 |
| Improved road upkeep and maintenance | | | 2024 |
| Improved road signage | | | 2024 |
| Creation of a transport organising authority | | European Union | 2029 |
| Monitoring and reporting of air quality and water pollution | | | 2029 |
| Emergence of new public transport operators | | | 2029 |
| Public support to the adoption of clean vehicles through financial incentives | | | 2029 |
| Optimised integration of port activities and reconversion of industrial disused sites | | | 2029 |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

| Urban transport investment measures | CAPEX Estimate |
|---|---|
| Public transport and NMT | 328 M€ |
| Street shaping urban roads and traffic management | 107 M€ |
| Other measures | 74 M€ |
| **Total** | **509 M€** |

# Finance leverage

| Financing resulting from the SUMP | Source | Amount |
|---|---|---|
| International loan for the BRT and other investments (associated) | World Bank | 370 M€[1] |
| Domestic contribution to the BRT and other investments (associated) | Government of Cameroon | 50 M€ |
| Grant for the implementation of SUMP soft measures | European Union | 2 M€ |

1 Development Projects: Douala Urban Mobility Project - P167795 (worldbank.org)

# Projected impacts

| Indicator | Impact 2030 (SUMP vs BAU) | Baseline - 2019 | Projected 2030 BAU | Projected 2030 SUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | • 0,19 Mt $CO_2$eq<br>• 20% | 0.548 Mt $CO_2$eq | 0.95 Mt $CO_2$eq | 0.76 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | • 36 kg $CO_2$eq / capita<br>• 20.7% | 161 kg $CO_2$eq / capita | 174 kg $CO_2$eq / capita | 138 kg $CO_2$eq / capita |
| **Access**<br>Increase of the proportion of the population living 500 meters or less of a public transport stop | Improved but not quantified | Not quantified | Not quantified | Not quantified |
| **Air pollution**<br>Decrease in mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | Improved but not quantified | Not quantified | Not quantified | Not quantified |
| **Modal share**<br>Increase of the modal shares of trips by public transport, walking and cycling | Formal public transport: +5%<br>Informal public transport: 0%<br>Walking: +6%<br>Cycling: 0%<br>**TOTAL: +6%** | Formal public transport: 2%<br>Informal public transport: 1%<br>Walking: 35%<br>Cycling: 0%<br>**TOTAL: 38%** | Formal public transport: 1%<br>Informal public transport: 0%<br>Walking: 34%<br>Cycling: 0%<br>**TOTAL: 35%** | Formal public transport: 6%<br>Informal public transport: 0%<br>Walking: 40%<br>Cycling: 0%<br>**TOTAL: 46%** |
| **Road safety**<br>Decrease of traffic fatalities in the urban area, per 100.000 inhabitants | Improved but not quantified | Not quantified | Not quantified | Not quantified |

# Highlights

## Pilot project to improve informal transport gets underway

Following the adoption of the SUMP, a pilot project for the professionalisation of motorbike taxis in Douala is being set up with the active participation of CODATU. The aim is to implement measures to improve motorbike taxi services for both drivers and users, and to provide public authorities with a knowledge base for regulating the system. Specific action points include the establishment of a contractual framework, a fleet-renewal policy, and the promotion or establishment of on-demand motorbike taxi platforms.

# Yaoundé, Cameroon

Partner city

Status of the project: **completed technical assistance**


## Basic Information

Area: **Administrative limits: 304 km², Urbanised area: 183 km²**

Population: **4.1 million (2020, functional urban area)**

GDP per capita: **USD 1,529 (2018, Cameroon)**

## Key facts

| City, Country | Yaoundé, Cameroon |
|---|---|
| **Population** | 4.1 million (2020, functional urban area) |
| **Growth rate** | 3.5% |
| **Land area** | Administrative limits: 304 km²<br>Urbanised area: 183 km² |
| **GDP per capita** | USD 1,529 (2018, Cameroon) |
| **Baseline motorization rate**[1] | 58 cars per 1000 inhabitants<br>18 motorbikes per 1000 inhabitants |
| **Annual transport emissions per capita**[2] | 241 kg $CO_{2eq}$ |
| **Local Partner (organization)** | Urban Community of Yaoundé (CUY) |
| **Implementing partners** | Agence Française de Développement (AFD), Codatu |
| **Donors supporting technical assistance for SUMP** | French Facility for Global Environment (FFEM) |
| **Amount in technical assistance** | Approximately €350,000[3] |

1 For comparison with motorisation rates in European capital cities, Berlin has a motorisation rate of 330 car per 1000 inhabitants, and other capital cities in Austria, Belgium, Denmark, France, Hungary, Ireland and the Netherlands have a motorisation rate under 450 cars per 1000 inhabitants. Source: Eurostat Regional Yearbook 2020.

2 For comparison, the annual transport (except air travel) emissions per capita in Germany are 1.61 tC02eq. Source: Die Umweltwirtschaft in Deutschland: Entwicklung, Struktur und internationale Wettbewerbsfähigkeit. www.umweltbundesamt.de

3 From a FFEM envelope of 2 M€.

| | |
|---|---|
| **SUMP implementation timeline** | Joined MobiliseYourCity in November 2016<br>MobiliseDays in June 2016<br>Start of SUMP in March 2018<br>SUMP completed and approved in September 2019 |
| **SUMP Vision** | No concise vision formulated |
| **Approximate Total SUMP Investment Requirement (CAPEX/OPEX)** | **CAPEX by term**<br>• 298,1 M€ (2025) / 554,7 M€ (2035)<br>**Yearly OPEX to term**<br>• 15 M€ (2035)<br>**Total CAPEX & OPEX requirements by 2030**<br>• CAPEX: 550 M€<br>• OPEX: 151 M€<br>• Total CAPEX and OPEX: 701 M€ |

# Diagnosis: Urban Mobility in Yaoundé

Like many other major cities in sub-Saharan Africa, Yaoundé is experiencing rapid population growth. The metropolis suffers from a lack of mobility infrastructure and the financial resources to properly maintain what is has, whether it is the public transport network, the organisation of small-scale transport offer, parking facilities or even simply roads and pedestrian areas. The economy of the city suffers from the lack of infrastructure, and struggles to attract investors.

Following the current evolution of rapid urban growth, the population will reach 5.5 million inhabitants in 2035, and the urban area will reach a radius of 25 km by the end of the century. The increase in the demand for travel, and in the rate of motorisation accompanying the rise in income, may rapidly lead to the saturation of the existing system. Hence, travel times will increase significantly along with the overall cost of travel, due to the consumption of more fuel by private vehicles and taxis.

## Existing mobility and transport services

The transport system in Yaoundé, while being relatively fluid, is accident prone, uncomfortable, polluting, and expensive for the population.

There are about 8 million of trips travelled every day, from which one third are short distance trips travelled by walking or by moto-taxis. For longer trips, taxis, motorbikes, and cars are the main modes of transport. Official bus service and informal minibuses currently only play a minor role.

All these modes of transport use the same poorly maintained road network, where only 300 km from 2700 km of roads are asphalted. The state of the road network limits both private and public transport. In particular, it suffers from the following problems:

- Most of the secondary and local roads are unasphalted.
- Main and metropolitan roads are not optimally laid out and do not provide for the sharing of the road network between low-capacity modes and high-capacity modes (bus) and soft modes
- Degraded road surfaces or unmanaged intersections create traffic bottlenecks.
- Vehicle, including freight vehicles are parked on the road.
- Geographical elements and neighbourhoods that are densely built on several km² without wide roads constitute obstacles to transit traffic of cars and public transport.

**Walking:** 4 million trips travelled every day by pedestrians and walking is the main mode of transport. However, the lack of sidewalk combined with a chaotic traffic poses a threat to pedestrians' safety, and they are particularly exposed to traffic accidents.

**Taxi service:** Less than 5% of vehicles are taxis, but they have a 38% share of the modal split by distance. They transport all categories of the population, and with an average occupation rate of 3 passengers, they are the main motorized mode of transport. Taxis, even used collectively, are relatively expensive: for one passenger out of four, taxi fares only represent over 15% of their household income.

**Moto-taxis:** Moto-taxis are particularly present in the outlying districts. Their flexibility and agility allow them to use roads that are unpracticable for other vehicles, due to the poor state of the pavement or the narrowness of the road. Moto-taxis, often operated informally by very young drivers, are notably resistant to any regulation, which is nevertheless necessary to address the safety issues associated with this mode of transport.

**Private cars:** cars are handicapped by the state of the road network and only 10% of trips are made by private cars. The car ownership rate, which is highly dependent on household income, is nevertheless increasing along with the standard of living.

**Informal minibuses:** Informal minibuses are of lesser importance in comparison to other African cities. In Yaoundé, they are mainly used for transport between the centre and the periphery, following fixed routes and departing from bus stations.

**Formal buses:** A formal bus service is available through the private company Stecy and is growing, but remains a minority element in the current mobility landscape. No facilities are in place to encourage this mode of transport. Buses travel on the same roadway as other vehicles and suffer from congestion and low commercial speed.

## Environmental challenges

The vehicle fleet is very old (20% of vehicles are over 20 years old) and is very polluting, emitting large amounts of greenhouse gases and air pollutants.

Internal trips within the CUY emit the equivalent of 635 ktCO2 per year. Along with distances travelled by vehicles, emissions follow a strong growth. Unfortunately, the gradual improvement in the performance of the vehicle fleet linked to its renewal does not counterbalance this trend.

In a list of 54 countries, Cameroon ranked 15th among the most polluted countries in Africa in 2017. While the average concentrations of pollutants are not sufficiently documented, punctual measurements have observed peak concentrations of fine particulate maters PM2.5 that were one hundred times higher than the WHO standard.

## Safety and comforts are key issues to be addressed

Safety is a major issue for mobility in Yaoundé, where accidents cause around 1,000 deaths and 5,000 serious injuries per year. A specific study on a sample of taxi drivers revealed that 73% of them had an accident in the two previous years. In addition to accidents, inquired passengers raised the issue of the risk of assault in taxis.

Comfort is also often a problem: long waits in hot or rainy environments, difficulty in finding an available taxi in certain areas, or vehicles overloaded with passengers and goods.

## Gender disparities, women travel less and use less comfortable modes of transport

The diagnosis describes a slight difference in the number of journeys made by women, which can be linked to significant disparities in terms of full-time formal employment (15% of women compared to 27% of men). Compared to men, women in Yaoundé make half as many journeys using private cars but travel more by foot or on moto-taxis.

### The high cost of transport puts low income users under pressure

After housing and food, transport is the third largest item of expenditure for Yaoundé residents and accounts for more than 11% of household spending. This is particularly critical in this city where inequalities are extremely high, and the highest 20% of incomes are on average more than 7 times higher than the bottom 20%.

The high cost of transport is attributed to the low efficiency of minibuses, taxis, and motor taxis, linked with a poor road network, and the weakness of public transport offer.

### Institutional and financial capacity of the CUY: a gap remains between mandate and resources

The Urban Community of Yaoundé is the transport organising authority, both legally and in practice.

However, in spite of notable capacities, the CUY does not currently have the institutional means nor the adequate human resources to perform some of the essential tasks assigned to it by law, including the following: (i) the organisation and management of public transport, (ii) the traffic and parking management, and (iii) continuous monitoring of performance the urban transport system and the quality of service provided to citizens.

As the majority of the city will develop outside the administrative boundaries of the CUY by 2035, the municipal authorities, i.e. the CUY and the peripheral municipalities will have to develop together an integrated organisation for public transport and define a structuring infrastructure network and priority multimodal investment plans on the scale of the future large conurbation.

In total, financial resources allocated to the construction and maintenance of roads, nearly 40 M€ per year, are in line with expectations based on the economic status of the city and country. However, the CUY has an insufficient share of these resources in perspective of its mandate. The national level compensates financially with its much greater resources and the support of international donors, but coordination is insufficient between the city and the ministries responsible for urban development and public works.

## The SUMP preparation process and stakeholder involvement

In order to take the future urban development into account, the perimeter of the study covers a surface of about 700 km², from which 304 km² are within the administrative boundaries of the city.

Throughout the process of developing the SUMP, the various stakeholders involved in mobility were associated through technical committees, specific exchange workshops, and bilateral meetings.

The technical committees gathered the Yaoundé Urban Community, the Ministries of Urban Development, Transport, Public Works, Economy and Planning, Environment, the Police, the various taxi, and motorbike taxi unions, the Stecy bus company and the French Development Agency (AFD).

Specific workshops in small groups linked representatives of the technical committee with academics, officials from the local districts, rail transporters, and managers of places that generate large amounts of travel such as markets. These workshops enabled the different actors to take sufficient ownership of the approach.

In addition to the members of the technical committee, the team in charge of developing the SUMP also met bilaterally with international donors and representatives of the local districts.

Three time-horizons were considered:

A. The very short term: horizon of 1 to 2 years in order to highlight quick wins
B. The medium term: horizon of 5 to 7 years in order to observe the effects of the first SUMP measures.
C. The long term: horizon of 15 years to aim at significant results, to anticipate possible needs for reorientation.

# Vision setting and definition of scenarios

## Strategic Vision

The SUMP of Yaoundé does not propose clear vision and goals for urban mobility in the city. However, it fully adopts the EASI framework and puts a strong emphasis on identifying challenges and solutions. Challenge-related objectives of the SUMP are:

- Improving traffic conditions by developing a network of roads beneficial to all.
- Reducing the cost of mobility supported by households
- Improving the quality of life in the city with a less dangerous and less polluting system

### How does the SUMP adopt the EASI framework?

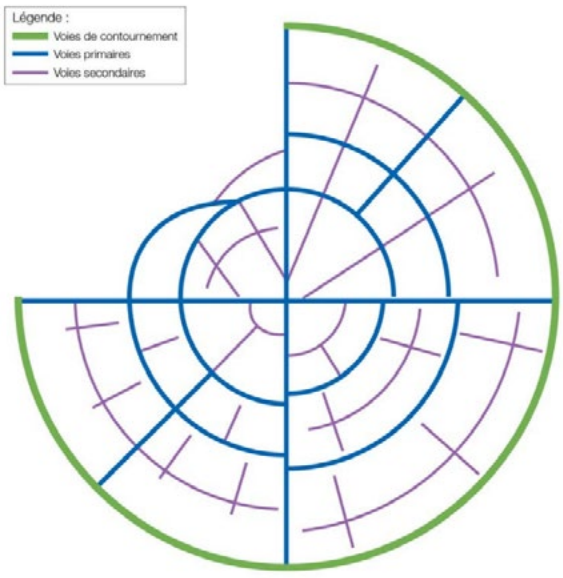
**ENABLE -** Improvement of steering and financing

**AVOID** - Transit Oriented urban Development, urban densification, densification around developing mass transit routes

**SHIFT** - Multimodal transport scheme, complementarity of transport modes

**IMPROVE** - Optimisation of the road network and improvement of the vehicle fleet

- Developing main roads
- Sharing space
- Traffic regulation
- Renewing the vehicle fleet towards less polluting and lower emissions.




The SUMP develops the concept of coherent road network: The Cross.

The network builds up on existing roads and makes use of north-south and east-west metropolitan axes, and of multiple hierarchical levels of roads.

The road infrastructure will provide an efficient inclusion of the bus offer, for example with reserved lanes on congested sections.

# Test scenarios and selected scenario

Three specific scenarios where defined in order to assess the impact of the SUMP by 2025 and by 2035, each one developed with a different level of ambition.

**Baseline scenario:** no SUMP implementation takes place, but existing laws and regulations are implemented. Private car ownership will increase, and the modal share of public transport will decrease. Travel times are expected to increase sharply, especially due to the increasing congestion in the capital.

**Central scenario:** this scenario provides immediate solutions to issues related to the road network. It is an ambitious infrastructure project focused on increasing the capacity of the roads to accommodate increased private vehicle traffic. However, with the appropriate road layout and the establishment of mass transport lines, this scenario allows for a significant shift to public transport, whose modal share is expected to evolve positively.

**Ambitious scenario:** The ambitious scenario also includes an important road infrastructure component in the short term, but focuses more on the creation of mass transport lines, including a train-tram project by 2035.

The scenario finally selected is the **Central scenario**. This scenario aims at the completion in the short term (2025) of a more efficient, adequate, and structuring road network. A public transport offer will also be put in place, but on a reduced number of lines, aiming at a good level of service and reliability, an offer that is affordable for the user and financially balanced. After having proven its effectiveness and relevance and gotten the adhesion of users, the public transport offer can be extended and replicated on a larger scale according to a level of ambition yet to be defined. Indeed, the current measures respond to imperative needs but will not make it possible to meet all the long-term challenges, particularly the reduction of greenhouse gas emissions. The SUMP therefore recommends a reassessment in 2025 and envisages an increase in ambition in terms of public transport in the long term.

# Key SUMP measures

| Measure | Cost estimates in M€ | Proposed Financing Source | Implemented by |
|---|---|---|---|
| **Total cost** | **891.9 M€** | | |
| **Physical investments, infrastructure and rolling stock** | SUBTOTAL: 852.8 M€ | | |
| Bypass roads | 2025: 157 M€<br>2035: 304 M€ | Domestic financing / No international financing identified | 2025<br>2035 |
| Primary roads | 2025: 29.7 M€<br>2035: 94.5 M€ | Domestic financing / No international financing identified | 2025<br>2035 |
| Secondary roads | 13 M€ | Domestic financing / No international financing identified | 2035 |
| Intersections and road measures | 2025: 51.5 M€<br>2030: 19.8 M€ | AFD | 2025<br>2030 |
| Space for pedestrians, including the pilot neighbourhood “Coeur de Ville” | 2020: 5 M€<br>2035: 1.4 M€/year | AFD | 2020<br>2035 |
| Public transport lines (bus and minibus) and related road facilities | 2025: 54.9 M€<br>2035: 102.4 M€ | Domestic financing / No international financing identified | 2025<br>2035 |
| **Additional studies and plans** | SUBTOTAL: 28.7 M€ | | |
| Studies and support reorganisation plan for bus lines | 2025: 9.7 M€<br>2035: 19 M€ | Domestic financing / No international financing identified | 2025<br>2035 |
| **Regulation, institution and policy reforms** | SUBTOTAL: 10.4 M€ | | |

| | | | |
|---|---|---|---|
| **Informal transport project** | | | |
| **Reform of the taxi and moto-taxi systems** | | | |
| Continuous formalisation of moto-taxis and informal buses through the establishment of a new institution responsible for vocational training, schedules regulation, the administrative formalisation. | 4.5 M€ | European Union | 2024 |
| **Institutional reforms:** creation of a local commission and a technical service for mobility | 2.1 M€ | Domestic financing / No international financing identified | 2020 |
| Control and training centre for mobility and transport | 3.8 M€ | Domestic financing / No international financing identified | 2023 |

# Projected results and impact

The implementation of the measures identified in the SUMP is expected to lead to a significant impact in terms of GHG emission reduction, improvement of the modal share of sustainable transport modes, and more. The following table presents the expected results and impact.

**GHG emission (SDG 11)**

Projected emissions in absolute value:

| | Baseline 2018 | BAU 2025 | SUMP 2025 | BAU 2035 | SUMP 2035 | SUMP vs BAU 2035 |
|---|---|---|---|---|---|---|
| Per capita | 241 kg $CO_{2eq}$ | 284 kg $CO_{2eq}$ | 251 kg $CO_{2eq}$ | 367 kg $CO_{2eq}$ | 271 kg $CO_{2eq}$ | -26.16% |
| Total | 0.78 Mt $CO_{2eq}$ | 1.14 Mt $CO_{2eq}$ | 1.01 Mt $CO_{2eq}$ | 2.00 Mt $CO_{2eq}$ | 1.48 Mt $CO_{2eq}$ | -26.00% |

Projected increase of annual GHG emissions by 2029, in percentage of the baseline:

- Business-as-usual scenario: +101%
- SUMP scenario: +59%

**Accessibility (SDG 11)**

| | Baseline 2018 | BAU 2025 | SUMP 2025 | BAU 2035 | SUMP 2035 |
|---|---|---|---|---|---|
| Total population covered | 2,212,283 | 4,028,557 | 4,028,557 | 5,599,757 | 5,599,757 |
| Population at 500m or less of public transport stops | 1,350,000 | 1,415,700 | 1,405,500 | 1,528,900 | 1,888,600 |
| % Access | 42% | 35% | 35% | 27% | 34% |

**Air pollution (SDG 11)**

Improved but not quantified

**Modal share**

Percentage of total trips being realized with Public Transport

| | Baseline 2018 | BAU 2025 | SUMP 2025 | BAU 2035 | SUMP 2035 |
|---|---|---|---|---|---|
| Modal share of Public Transport | 2% | 1% | 9% | 2% | 19% |
| Modal share of walking and cycling | 32% | 31% | 34% | 29% | 35% |
| Total | 34% | 32% | 43% | 31% | 54% |

| | | | | |
|---|---|---|---|---|
| **Road safety (SDG 3)** | | Baseline 2018 | SUMP 2025 | SUMP 2035 |
| | Deaths | 1000 | 800 | 500 |
| | Heavily wounded | 5000 | 4000 | 2500 |
| **Mobilised finance (SDG 17)** | • **66 M€ - Secured international grant from AFD** for "Yaoundé Coeur de Ville" project.<br>• **2 M€** - **Secured grant for the implementation of SUMP** governance measures, including the creation of a Transport Organising Authority, an Urban Planning Agency, and the formalisation of moto-taxis and informal buses through outreach (European Union) | | | |
| **Expected institutional impact** | The measures identified in the SUMP are complemented with a National Urban Mobility Policy, adopted in parallel to the SUMP process. | | | |

# Lessons learned

On the occasion of the 3rd MobiliseYourCity conference in Yaoundé in 2019 and the official presentation of the SUMP, a reflection group[4] composed of different stakeholders proposed areas for improvement for future SUMPs, particularly on the African continent.

I. **Placing the project owner at the centre of the SUMP process is important: authorities responsible for mobility should lead the planning process, with the support of MobiliseYourCity partners.**

**Recommendation:** When drafting the ToRs, clearly state the role of the responsible local authorities in project ownership and ensure their capacity to monitor the process.

II. **Ambitious surveys such as "household travel surveys" are expensive, are sometimes not adapted to the local context and available resources, and can produce unreliable data.**

**Recommendation:** Demographic surveys (with car and two-wheeler motorisation rates) can be carried out on the basis of existing national surveys. They should be supplemented by origin-destination surveys (such as a simplified household survey, or road corridor and public transport network surveys) and qualitative socio-anthropological fieldwork to better capture the individual and collective factors behind the behaviour of respondents in terms of urban mobility. These two methodologies can be complementary and origin-destination surveys would allow the rapid identification of large masses of journeys.

III. **Predictive traffic models are expensive to develop, can create the illusion of a "scientific" approach and may generate a gap between their results and their real appropriation by technicians and local elected officials.**

**Recommendation:** Limit the use of models, base them on the observation and expertise of local counterparts and consultants (expert opinion). The SUMP must help identifying "strong lines", a concept that does not necessarily lead to the choice of one mode rather than another, and to use the models in a second stage, like during pre-feasibility studies.

IV. **The link between transport and urban planning is insufficiently considered, even though transport planning documents can be used as a lever for the implementation of other types of plans.**

**Recommendation:** Strengthen local project management, institutional structuring, and governance, build capacities of local contracting authorities, and provide them with a framework for steering the implementation of SUMP action plans. When master plans exist for urban planning in African cities, they should be included in the terms of reference of the SUMP, even if their application is limited to a limited number of projects. Work done at national level (NUMP) should contribute to providing a legislative and legal framework and sources of funding.

4 Reflection group led by CODATU: Patrice Berger and Thibaut Descroux (UrbaLyon), Thierry Goin (CEREMA), Marie Dols (consultant), Philipe Bossuet (SYTRAL), Jean-Jacques Helluin, Mael Martinie, Sofia Martin, Antoine Clémot (CODATU).

# Morocco

Partner city

Status of the project: **completed technical assistance**


## Basic Information

Population: **35,740,000** | Growth rate: **1,20%**

Percent of urban population: **58% (2010)**

GDP per capita: **USD 8,612 (2017)**

Percent of population living below the national poverty lines: **4,8% (2013)**

Nationally Determined Contribution (NDC): **Quantified transport related NDC**

National GHG emissions per capita: **1.75 ($tCO_2eq$)**

## Context

Over the last decade, the Government of Morocco has developed a national policy with the objectives of improving urban mobility and addressing the current and future challenges Moroccan cities are facing. The planning process is therefore already at an advanced level of maturity in the country.

The organisation of a National Day for Urban Transport (JNTU) in 2013 was an opportunity to relaunch the public debate over the main urgent challenges of urban mobility policies. The creation of the Fund for Urban and Inter-urban Road Transport Reforms (FART) and the empowerment of local authorities in the context of devolution and decentralization, contributed to a redefinition of the national strategy. In 2016, the "MobiliseDays" event in Rabat highlighted the need for evolutions of the national framework and the role of SUMPs as a leverage to structure sustainable urban mobility policies.

Moreover, as the host country of the COP22 in 2016, the government of Morocco committed to reducing its greenhouse gas (GHG) emissions by 13% by 2030 and was one of the first countries to join the MobiliseYourCity Partnership. In 2021 Morocco increased its ambitions. In its updated nationally determined contributions, the country aims to reduce the GHG emissions by 18.5% until 2030 unconditionally and could even reach 45.5% reduction with the support of other parties of the Paris Agreement (conditional target).

# Support from the Partnership

**Funded by:** FFEM

**Implemented by:** AFD, Ademe, Cerema and CODATU, through the MobiliseYourCity Morocco Program

**Local counterpart:** Ministry of Home Affairs, directorate general of local authorities (DGCL)

**Objectives:** The support to Morocco is to develop a coherent framework for the improvement of urban mobility, in relation with city level actions. Specifically, it aims at building capacities both at national and local level, and at developing 2 policy documents:

- National vision for urban mobility in 2030 (NUMP)
- Action plan for implementation of the urban mobility national strategy.

# NUMP key measures

The following points highlight the most significant measures identified in the NUMP.

- Integration of the mobility dimension into the actions of the other major related sectors
- Organisation and planning of urban mobility to contribute to sustainable development
- Maintenance and redeployment of government funding
- Increase and rationalization of funding from the municipalities
- Completion of the legal and institutional framework and implementation pilot operations for all other possible sources of funding
- Development of legal and technical framework for new urban mobility solutions in terms of legislation, regulations, and technical choices
- Implementation of high-impact pilot projects
- Promotion of integrated and efficient organisation of all modes of public transport
- Maintenance of realistic and easy-to-manage public transport fare policy
- Development of governance tools
- Strengthening institutional and human resource capacity for better governance at central and local levels
- Development of institutional capacity and skills for digital solutions for urban mobility
- Development of better understanding of the challenges and priorities for action of digital technology as applied to urban mobility.
- Improvement of delegated management of public transport

# Tunisia

Partner city

Status of the project: **completed technical assistance**


## Basic Information

Population: **11,540,000** | Growth rate: **1.1%**

Percent of urban population: **70%**

GDP per capita: **USD 3,317**

Percentage of the population living below the national poverty lines: **15.5%**

Nationally Determined Contribution (NDC): **no mobility/ transport related NDC**

$CO_2$ Emissions (total in million tonnes $CO_2$/ per capita in tonnes): **32.07 / 2.74**

$CO_2$ Transport Emissions (total in million tonnes $CO_2$/ per capita in tonnes): **7.27 / 0.62Proportion of transport related GHG emissions: 21%**

## Context

The development of the transport sector in Tunisia resembles a pathway that is common across most countries in the Global South; Tunisia is experiencing a steady rate of urbanization that is expected to result in three-fourths of the population living in urban areas by 2030. A growing citizenry exerts increasing pressure to the existing urban transport infrastructure, already characterized by an inefficient public transport service that has been historically underfunded – state budgets for road infrastructure development are as high as those for public transport - and unable to satisfy the mobility demands of the urban population. These factors have resulted in an increasing motorization rate, particularly private means of transportation, and subsequently high GHG emission levels:

- Individual transport accounts for 63% of all motorised passenger journeys. This percentage stands in opposite relation to 1970s modal distribution, when public transport represented 70% of the modal share.
- Nonetheless, active mobility constitutes still an essential means of transportation that is commonly used by more than 50% of inhabitants in medium-sized cities and approximately 36% of citizens in Tunis, Sousse and Sfax.
- Paratransit has experienced tremendous gains since 2011 with the number of permits granted increasing by 89% for private taxis and 260% for collective taxis between 2001 and 2015.
- The vehicle fleet has steadily increased by more than 55% between 2006 and 2015, comprising now more than 1.5 million cars.
- In 2012 the transport sector emitted 6.5 $MtCO_2e$, or 21% of total net GHG emissions.
- Congestion in urban areas has become a frequent problem, for example reducing average speeds to 7 km/h during rush hours in the capital city, Tunis and inflicting a cost of up to 2% of the country's GDP.
- Air pollution represents a significant health and economic problem, its cost amounting to between 2% and 10% of GDP.

- While the transport sector accounts for 30% of the country's energy consumption, 94% of this share is concentrated in road transportation, which is in turn disaggregated by the following sub-sectors:
  - Passenger cars: 49%
  - Commercial vehicles 19%
  - Buses 15%
  - Freight transport 18%

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy and Investment Programme (NUMP)

**Type of NUMP:** Policy NUMP

**Funded by:** FFEM and BMUV-ICI

**Funding amount:** EUR 0.3 M (FFEM), 0.1 M (Cerema) and 0.2 M (BMUV-ICI)

**Implemented by:** GIZ, AFD, Codatu and Cerema

**Local counterpart:** Ministry of Transport

**Finance leverage:** EUR 850,000

**Main purpose of the NUMP:** contribute to the country's NDC and offer cities a general enabling framework for sustainable urban mobility planning

**Supported activities:**

With support from MobiliseYourCity's implementing partners AFD, GIZ, Cerema, and Codatu, the Tunisian Ministry of Transport began the process of developing a National Urban Mobility Policy (NUMP) after the country submitted its first NDC in 2015 and joined the Partnership in 2016. The Tunisian NUMP has a strong focus on climate change mitigation and aims to contribute to the country's NDC target of reducing carbon intensity ($tCO_2e$/GDP) in 2030 by 41% compared to the reference year 2010.

The Tunisian NUMP is comprehensive in nature and includes a broad package of measures to decarbonize transport, increase institutional capacities and improve the governance of the sector:

- Development of technical and institutional framework to support Tunisian cities in SUMP development
- Identification of sustainable urban mobility measures, including action plan for paratransit reform
- Establishment of national fund for urban mobility
- Establishment of National Urban Mobility Observatory
- Capacity building programme for local and national agencies
- Support to the ongoing decentralization process in the country through creation of local administrative entities

The NUMP, which included an emissions inventory, scenario modelling and definition of mitigation actions, was adopted by the national government in May 2020. The implementation of priority measures is currently undergoing with support from grant funding by AFD.

# Status of implementation

**Project start:** 2017 Q1

**Project completion:** 2020 Q2

**Completed outputs:**

- Initial diagnostic and priority setting
- Definition of a vision and strategic orientations
- Definition of action plan, responsibilities and resources
- NUMP elaboration
- Official adoption of the NUMP by the national government
- Tunisian MRV approach
- Tunisian SUMP approach

**Next expected outputs**

- Sustainable Mobility Forum to kickstart the implementation of the NUMP
- Support SUMP elaboration in the Great Tunis area
- Mobilisation of international experts to support the Ministry of Transport implement prioritised actions: Preparation of framework and identification of administrative resources and competencies for the establishment of local transport authorities, to be mandated by law
- Development Policy Loan funded jointly by AFD and World Bank using NUMP as backbone of a public policy matrix

# NUMP key measures and cost estimates

The following list highlights the most significant measures identified in the NUMP.

## Strategic area 1: Governance

- Establishment of appropriate structures at the local level for planning, development and management of sustainable mobility
- Creation of Central Technical Support Unit for implementation of the NUMP
- Creation of National Commission on Urban Mobility
- Implementation of good governance measures for the mobility sector

## Strategic area 2: Capacity building

- Development of capacities of managerial and administrative staff
- Integration of urban mobility in training programs of civil engineers, urban planners and administrative staff
- Establishment of networks for knowledge exchange and dissemination within the sector
- Development of implementation plan for awareness raising of civil society, elected officials and media
- Development of capacities of technical and operational, and administrative staff involved in urban mobility

## Strategic area 3: Financing sustainable urban mobility

- Improvement of role of the State through establishment of National Fund for Urban Mobility
- Definition of competences of local governments to finance urban mobility
- Revision of fare policy and financing of public transportation
- Reduction and redirection of fuel subsidies to Urban Mobility Fund
- Improvement of compensation system for school transport

## Strategic area 4: Urban public transport

- Development of public transport rationalization plans
- Establishment of public transport regulatory unit within metropolitan mobility authorities
- Restructuring of public transport companies
- Set up public service delegation contracts between authorities and public transport companies
- Regulation of paratransit services

## Strategic area 5: Improved coordination between transport and land-use planning

- Promotion of integration between master development plans, urban travel plans, and urban development plans
- Establishment of legal provisions for greater coherency between land-use and transport planning
- Promotion of densification of major transit routes through Transport Oriented Development (TOD)

## Strategic area 6: Management of individual motorized transport development

- Improvement road sharing between different modes
- Design of legal and regulatory framework for carpooling
- Establishment of company travel plans for public organizations
- Mainstreaming and support on the development of traffic management plans at the local level
- Feasibility study for introducing restrictive parking policies
- Implementation of initiatives to improve freight transport efficiency
- Promotion of intermodality and fare integration between collective transport modes
- Expedite implementation of mass transit projects

## Strategic area 7: Promotion of active transportation

- Development of Active Mobility Action Plan at the national level
- Development of Active Mobility Master Plans in main urban areas
- Implementation of sidewalk rehabilitation campaign
- Improvement of enforcement capacities to fight illegal use of public space
- Integration of active mobility into major infrastructure projects

### Strategic area 8: Promotion of safer, cleaner and more inclusive urban mobility

- Improvement of road safety in urban areas
- Promotion of e-mobility and alternative fuels
- Introduction of vehicle emission standards
- Promotion of accessibility for most vulnerable population

### Strategic area 9: Development of digital solutions for urban mobility

- Implementation of action plan Smart Mobility Tunisia

## Finance leverage

| Financing resulting from the NUMP | Source | Amount |
|---|---|---|
| Grant fund to support NUMP implementation | AFD | EUR 250,000 |
| Grant fund to develop urban mobility plan for the Greater Metropolitan Area of Tunis | Republic of Tunisia | EUR 600,000 |
| Grant fund to finance actions of the NUMP (studies, capacity building and tender support for NUMP implementation) | AFD | EUR 400,000 |

## Projected impacts

| Indicator | Impact 2030 (SUMP vs BAU) | Baseline - 2015 | Projected 2030 BAU | Projected 2030 SUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -3 300 000 t$CO_2$eq | 9 200 000 t$CO_2$eq | 15 300 000 t$CO_2$eq | 12 000 000 t$CO_2$eq |
| **Access** | | | | |
| Increase of the proportion of the population living 500 meters or less of a public transport stop | Unknown | Unknown | Unknown | 80% |
| **Modal share** | | | | |
| Increase of the modal shares of trips by public transport, walking and cycling | TOTAL: 31.4% | TOTAL: 53.6% | Unknown | TOTAL: 85% |
| **Road safety** | | | | |
| Decrease of traffic fatalities in the urban area, per 100.000 inhabitants | -50% | -55 fatalities/100,000 hab | Unknown | -22 fatalities/100,000 hab |

# Highlights

## New governance framework for urban mobility and a National Mobility Fund

Since 2021, an AFD-funded consultant assists the Ministry of Transport for the implementation of a new governance framework for urban mobility, and a National Mobility Fund:

At a national level, the national government is planning the creation of a National Urban Mobility Commission (CNMU) to ensure the political support of the NUMP as well as all the structural reforms proposed, and a Central Technical Support Unit (UTAC) providing technical support to the CNMU and responsible for the operational implementation of most of the actions recommended by the NUMP. It should be first hosted in-house by the Ministry of Transport, to become later an independent public institution.

To ensure that State funding is stable and predictable, the NUMP also plans to create a National Urban Mobility Fund (FNMU) in 2022, to which certain national tax resources from transport such as the road tax would be allocated, as well as certain local taxes. The decentralisation process in Tunisia is still a major challenge, and adjustments to the legal framework to solve the governance problems created by the contradictions between the Local Authorities Code and Law 2004-33 of April 19, 2004, on the organization of land transport still need to be done. An additional challenge is to find out the right legal status for the new entities created at the national level in a context of political instability and very limited budgetary space.

At local scale, depending on the size of the urban areas, Metropolitan Urban Mobility Authorities (AMMU) will be created, as well as Urban Mobility Departments (DMU) within the municipalities, in particular to ensure the development of local mobility strategies and the management of public transport networks. Additionally, there has been advanced discussion with the AUGT (Urban Planning Agency) for the preparation of a SUMP for the metropolitan area of Tunis.

# Dire Dawa, Ethiopia

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 70 km$^2$

Population: 320,000 | Growth rate: 4%

GDP per capita: USD 855.8 (2019)

Modal Share

- Informal public transport: 42%
- Walking: 46%
- Private cars: 4%
- Private motorbikes or 2-wheelers: 1%
- Other: 8%

National GHG emissions per capita: 1.60 ($tCO_2eq$)

Exposure to climate change: HIGH

*Region capital city*

## Context

Located on a large flat plain between Addis Ababa and Djibouti, Dire Dawa is meant to become the main economic hub of eastern Ethiopia. Nowadays, it presents a high density of commercial activities, including markets that generate important flows of goods and people at different scale, putting some pressure over roads and public spaces. In the midterm, national freight transit shall boom, along with the development of the national road network and the integration of the new railway into the logistic system.

477,000 trips are made daily in Dire Dawa. Mobility patterns reveal a relatively high propension to move (1.8 daily trips per inhabitants). Dire Dawa is located on a secondary national/international freight corridor between Addis Abeba and Djibouti, meaning that a significant volume of trucks transits through the city. Dire Dawa currently does not have any transport master plan.

Two railway lines currently serve Dire Dawa. The century old Ethio-Djiboutian railway is now nearly disused and only keeps one or two regional services between Dire Dawa and Dewele at the Djibutian border. The new Chinese-built railway line between Addis Abeba and Djibouti is operating since 2018 and links both passenger and freight services with a planned dry port near the new station. Railway does not yet appear as a competitive alternative to road freight, but services are only beginning.

The road network in Dire Dawa is able to bear the different mobility flows going through the city, whether for transit, exchange or internal purposes, without major disturbance. However, the pressured exerted on the network is extremely unbalanced, with an overwhelming weight on local roads and a limited lineage of structuring ones (primary, secondary, tertiary).

There is no existing mass transit system. Bajaj represent most of the public transport supply, with 6,000 units and a hundred lines. It can be used for both people and goods. Bajaj supply varies quite a lot according to places in the city and time of the day. Bajaj is a fully private supply that only targets the most solvent market segments and does not address properly the others, leaving some mobility demand unanswered. On peak hours a few minibuses provide a complementary supply to Bajaj on three routes. The publicly operated service city bus is very limited and consists of 10 urban routes limited to peak hours (four rides a day).

Urban and road transport are managed at both federal and local level. Although responsibilities and perimeters are properly defined, some interfaces regarding road or urban transports can be uneasy to manage. Both the city and the region of Dire Dawa are under the authority of the mayor. The nine urban *Kebeles* are managed by the city administration with different transport related duties falling under its authority: city bus, road authority and traffic police. The Federal Transport Authority (FTA) is another major player regulating the transport sector through the delivery of licenses. It is the main interlocutor for Bajaj drivers associations. The Ethiopian Road Authority (ERA) manages the interurban road network and national interest road projects in the city (industrial park).

Dire Dawa Administration, the local counterpart, has mandate and responsibility to finance mass public transport infrastructure and the running cost of public transports is part of the public authority's budget. The budget for the urban transport sector was set between 480 and 655 million BRR (14 – 19 M USD) in the past few years.

# Challenges and main aim of the SUMP

Mobility in Dire Dawa faces several problems at the same time. They include:

- Lack of road network structuring
- Lack of integrated road axis management
- Lack of proper Bajaj supply structuration
- Lack of infrastructure for non-motorized modes leading to poor consideration in planning, investments and policy-making
- Lack of robust logistic chains organization
- Lack of an integrated mobility strategy or multimodal approach
- Lack of coordination between economical, urban and mobility development strategies

The technical assistance will contribute to institutional strengthening by providing training sessions on the following topics:

- Data analysis and updating (including household surveys analysis) – module 3 or 4
- Modelling and demand studies – module 3 or 4 (after the model has been developed)
- SUMP follow-up and evaluation use and analysis of the household surveys – module 4

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Commission

**Funding amount:** EUR 550,000

**Implemented by:** AFD through Intra-ACP

**Local counterpart:** Dire Dawa Administration mayor and Cabinet Affairs Office, Finance and Economy Bureau

**Supported activities:**

- Project implementation support of the city government for the preparation of a SUMP

# Status of implementation

**Project start:** 2019 Q4

**Expected project completion:** 2022 Q1

**Completed outputs:**

- Reporting notes following missions 1 & 2
- Minutes of stakeholders meeting
- Surveys results
- Module 1 report (Urban mobility diagnosis)
- Module 2 report (Vision, goal setting and measure planning)
- Training conducted on transport modelling in July 2021

**Next expected outputs**

- Module 3 Action plan
- Presentation of the final SUMP and implementation strategy

# Core impact indicators baselines

| Indicator | Baseline – 2020 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 8.6 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 27 kg $CO_2$eq / capita |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 10 fatalities<br>/ 100,000 hab (2018) |
| **Affordability of public transport**<br>Share of monthly household budget for public transport | 17% |

# Highlights

## Linking urban planning and mobility planning will become essential in light of the changing city scale

It is expected that the number of inhabitants in Dire Dawa will nearly triple by 2040 (reaching 800 000 – 900 000 people). The patterns of this growth will significantly influence the mobility behaviour in the city. The SUMP scenarios are thus structured around the different future shapes of the city, taking the construction of an already planned new industrial city 15km away from the urban core into account. While the *scattered city scenario* could lead to an increase of the urban area by 114km$^2$, significantly increasing the length of trips, the alternative, desired scenarios of a polycentric city would ensure more efficient and sustainable transport through a densified development. They would also significantly reduce the newly urbanized areas until 2040 to 41km$^2$.

A structural plan for urban development has already been prepared by the municipality. Linking the SUMP to the structural plan and coordinating between urban development and mobility planning will be a key to future sustainable mobility in Dire Dawa.

## Walking is a shadow mode – data can shed a better light on its importance

The results of the household survey indicated that a majority of trips in Dire Dawa are made by foot (46%). Collecting this data showed that the importance of walking had been underestimated before by local decision-makers and helped to put active modes of transport on the agenda in the SUMP process. One objective of the SUMP is thus to keep the current modal share of active modes while making the city fully walkable. Non-motorised modes will for instance be taken into account in the planning and upgrading of roads to ensure that enough space is provided for pedestrians.

## Covid and political cycles have minimally affected the SUMP elaboration

Despite the ongoing COVID-19 pandemic and the political context in Ethiopia the SUMP process has only been delayed by about six months. In 2021 the missions continued as planned in February, April and July. The visits in Dire Dawa allowed for exchange with local stakeholders, politicians and public participation. Throughout the three missions, the diagnosis was validated, the scenarios and key objectives for the SUMP could be finalised and the action plan was discussed and agreed upon by local politicians. In September 2021, a new mayor was elected in Dire Dawa and the former mayor appointed as the director of transport.

# Kumasi, Ghana

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 2,603 km²

Population: 3,490,000 | Growth rate: + 4.43%

Type of city: Region capital city

GDP per capita: USD 4,700 (National)

Motorised Modal Share (Road Space Usage)

- Formal public transport (Bus): 15%
- Informal public transport (Trotro): 53%
- Private cars: 14%
- Taxis: 12%
- Freight vehicles: 1%
- Other (LDV): 4%

National GHG emissions per capita: 1.5 (tCO2eq)

Exposure to climate change: MEDIUM

## Context

Since the 2010s, more than half of the population in Ghana lives in urban areas. Despite their rapid expansion in size and population, most cities remain small by world standards.

In the last few years, institutions have been unable to cope with the rapid urban transition and Ghana has started to see the side effects of rapid urbanization, including congestion, unregulated urban expansion, and limited access to services and affordable quality housing.

The second largest city in Ghana is Kumasi. The greater Kumasi Metropolitan Area (gKMA) is the result of multiple extensions of the cities perimeter, including inner Kumasi (KMA) and twelve additional municipalities and districts. It covers a total land area of 2,603km² with a total population of 3,190,473.

Kumasi is set to more than double its population. The population density is expected to substantially increase from 159 people per hectare (in 2010) to 279 per hectare in 2033.

## Transport system

Rapid urbanization in Ghana has implications for urban mobility. Severe traffic congestion and road safety issues are the consequence of over-reliance on low-capacity passenger vehicles, inadequate traffic management, heavy dependence on informal public transport services, inadequate facilities for walking and cycling, occupation of roads by hawkers, and so on.

The predominant mode of transport in Kumasi are trotros, minibuses carrying between 14 and 23 passengers, and shared taxis which take four passengers. These vehicles do not provide scheduled services and they operate with the 'fill and go' principle, preventing passengers from planning their trips effectively.

The limited capacity of these vehicles is compensated by their large number. Distribution of the vehicles on routes depends on the preferences of the operators, usually linked with the conditions of the roads, leading to an uneven distribution of transport services.

A study carried out in 2011 found that 68% of users travel by trotro/buses, 12% by taxis. By contrast, trotros occupy less than 30% of road space usage, whiles private vehicles carrying only 14% of passengers account for 33%. The congestion level also affects the route choice for drivers.

The city has received 60 buses from the Ministry of Transport for the introduction of a mass transit service (pilot BRT), but only 20/25 are operated as the rest of the fleet waits for full study and implementation.

## Institutional context

The different Metropolitan, Municipal, or District Assemblies (MMDAs), which are part of gKMA, are empowered by law with legislative responsibilities to make policies, including the enabling legislative instruments, to provide leadership for local transport policy and planning, pass common bye-laws on passenger transport and facilitate a fair and efficient regulatory environment, by providing priority for operators using traffic management measures.

There is an existing Greater Kumasi Urban Development Master Plan, which was sponsored by JICA and coordinated by the Spatial Planning Department of KMA in collaboration with the 6 adjoining Assemblies that formed the gKMA. Unfortunately, there have been neither formal coordination among them nor any higher-level authority to regulate inter-MMDA transport.

At the national level, the Ministry of Roads and Transport (MoRT) is responsible for road infrastructure, the Ministry of Port, Harbors, and Railway is in charge of the mass-transit railway.

The Local Counterpart does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban mobility.

## Challenges and main aim of the SUMP

The main urban mobility challenges Kumasi is facing are described below:

- Poor integrated land use planning and control procedures, resulting in urban sprawl, traffic congestion on major roads and poor road safety
- Poor traffic management and poor condition of existing road network, connected with a low traffic capacity, misuse of road space and parking issues, and lack of continuity of pedestrian space
- Inadequate facilities and general inefficiency of the public transport system, which is unable to meet the demand
- Institutional framework not optimised for mobility operators and organisations, affecting profitability and preventing fleet renewal and enforcement of policies
- An excessive level of air pollution, because of the exhaust gas from a fleet of vehicles that is mainly old and poorly maintained

The main aims of the SUMP are to produce a high-quality document, ready for adoption by the different assemblies of the gKMA that identifies different measures to:

- Regulate public transport (incl. paratransit) for efficiency, safety and affordability;
- Improve traffic management and traffic safety measures, particularly reducing traffic congestion in the city center;
- Improve pedestrian/Non-Motorized Transport facilities for walkability and safety;

- Improve the institutional and financial framework in view of greater effectiveness for planning, designing, building, regulating and operating the mobility system in the city;
- Improve technical capacity of the professionals in the area of transport and GHG reduction;
- Build capacities of local experts and other mobility actors in Kumasi to implement, monitor and revise the Sustainable Urban Mobility Plan, serve as advocates of sustainable urban mobility planning, and transfer gained knowledge and experience with other cities in Ghana or subregion.

The technical assistance contributes to institutional strengthening by: inter alia, providing training sessions on selected topics.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 500,000

**Implemented by:** AFD and CODATU through the MobiliseYourCity Africa Program

**Local counterpart:** Kumasi Metropolitan Assembly (KMA)

**Supported activities:**

- SUMP for Kumasi (including support for inception, diagnosis, vision and strategic objectives, scenario development and action planning, financing requirements and public participation)
- Specific mission: Establishment of and Observatory on urban mobility data and GHG emissions

# Status of implementation

**Project start:** Q1 2021

**Expected project completion:** Q3 2022

**Completed outputs:**

- Signature of a Memorandum of Understanding between a delegate of Kumasi Metropolitan Assembly (KMA) – representing the different assemblies of the Greater Kumasi Metropolitan Area (GMA) and AFD (June 30th, 2020)
- Support for the tender and selection of consultants
- Inception phase. Inception report submitted in October 2021 (validation process on-going).
- MobiliseDays organized on November 30th and 31st 2021.

**Next expected outputs:**

- Completion of diagnosis phase (Q2 2022)
- Completion of vision/scenario phase (Q3 2022)
- Completion of action plan phase (Q4 2022)

# Core impact indicators baselines

| Indicator | Baseline – 2020 |
|---|---|
| **Annual transport related GHG emissions per capita** (kg $CO_2$eq) | 280 kg $CO_2$eq / capita (country wide average) |
| **Access to public transport**<br>Proportion of the population living 800 meters or less of a public transport stop | 95% |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 9,61 fatalities / 100,000 hab |

# Highlights in the past year

## SUMP activities were kicked-off in 2021 with Mobilise Days – need for an integrated approach highlighted

The SUMP process in Kumasi was initiated in 2021 with a first inception mission of the SUMP consultant team in April 2021. In addition, Mobilise Days were set up in November 2021 in Kumasi as part of kicking-off the SUMP process. As part of the Mobilise Days it became particularly apparent, that inclusive strategies for targeting sustainable mobility in Kumasi will be key for a success of the SUMP process. This does not only refer public participation, which will be essential, but also covers broader aspects related to developing an integrated approach to transport on a territorial level. This will be needed to ensure the inclusion of all greater Kumasi municipalities as well as all actors that are intervening more or less directly in the transport sector.

# Bouaké, Ivory Coast

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Urban area: **120 km²**

Population: **800,000** | **Growth rate: +3%**

GDP per capita: **USD 1,700 (national)**

National GHG emissions per capita: **0.98 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

*Region capital city*

# Context

Bouaké is situated in the center of the country, at the intersection of two important international road axes connecting Abidjan, Burkina Faso, Mali, Ghana, southern Guinea, and Liberia. The city is also a rail and air travel hub. It is home to an important wholesale market of regional food products which is at the heart of its economy.

## Transport system

The main network is well maintained and organized along central axes of the National Road Network. The secondary road network is underdeveloped. This results in the isolation and spatial segregation of some neighborhoods. The tertiary road network within residential areas is almost not driveable due to their current status. In 2014, only 20% of the 582km road network had been paved (122km) – mainly in the city center. Another 23% (135km) was considered passable. There are no parking problems due to the currently low rates of individual motorisation. However, the wide roads are not designed for parking nor to ensure the safety of cyclists and pedestrians. This situation could pose additional challenges in the future.

After the recent public transport company (*Societé de Transport Urbain de Bouaké* - STUB) went bankrupt in 2011, there has not been a predecessor. Consequently, a majority of the mobility demand is covered by informal transport. Due to the frequent use of butane gas as fuel and the related risk of explosions, informal taxis are a particularly challenging part of the rolling vehicle stock. Minibuses ("Gbakas") represent a smaller share of traffic but are more structured. Plans for the re-deployment of the public transport service through buses exist in the Ministry of Transport. To enhance intercity transport, a regional bus terminal is planned at the outskirts of the city to reduce traffic disruption in the center. Currently, informal modes (e.g. minibuses with 20 to 30 seats, called Massa / Dianra or Badjan) dominate the interregional transport of people and goods.

The most important mode of motorized transport is two-wheelers (including motorcycle taxis). It is economical, fast, better suited to road conditions and less sensitive to traffic congestion. However, motorcycles and moto-taxis have a predominant presence (60% in 2016) in accidents. Although hard to quantify, walking is an important mode of mobility.

The transport of goods in the urban area is mainly provided by small vehicles (tricycles, pickups, or tarpaulin vans), whose traffic and parking contribute to traffic congestion. Heavy truck traffic and parking, especially those that cross the city in lack of an alternative route, have an extremely negative impact on traffic and on the condition of the roads.

## Institutional context

The local authorities most involved in issues to improving urban mobility are the town hall of Bouaké, the Regional Directorate of Transport, and the prefecture. Local institutions do not yet have the means to organize and regulate the transverse and multi-sectoral issues related to mobility. This results in a lack of regulation and police power.

The local counterpart has no mandate and responsibility to finance mass public transport infrastructure. It does not have authority to borrow from international finance sources. There are no systems and procedures in place to monitor, evaluate and report on urban mobility.

## Challenges and main aim of the SUMP

Mobility in Bouaké faces several problems at the same time. They include:

- The overall mono-centric organization of the city, which attracts a lot of urban travel, and the low density of the urban grid which extends travel distances.
- The inadequate quality of the road network, its weak functional hierarchy and its radial organization which converges towards the city center.
- The lack of proper use of the asphalt-surfaced road (deficient organization of traffic, management of intersections and parking, serious road safety issues).
- Traffic congestion.
- Lack of public mass transport service. The trips from and to certain neighborhoods are limited to the use of moto-taxis and walking.
- The omnipresence of low-capacity passenger and goods transport service/paratransit sector.
- Lacking local institutional capacities to organize and regulate such transverse and multi-sectoral problems.
- A lack of regulation through the taking of coercive measures and the absence of police power regarding transport.

The challenge for the city of Bouaké today is to be able to adopt a strategy for sustainable urban mobility in line with the Urban Master Plan (SDU). This strategy is expected to consider the current and future challenges linked to climate change and sustainable development, as well as the specific mobility needs of people in vulnerable situations (children, physically disabled, pregnant women, etc.).

The technical assistance contributes to institutional strengthening by collecting data on the current situation, supporting the authorities in identifying the main challenges and best measures to face them, and organising tailor-made workshops on key mobility issues.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Commission

**Funding amount:** EUR 400,000

**Implemented by:** AFD and CODATU through the MobiliseYourCity Africa Program

**Local counterpart:** Municipality of Bouaké

# Status of implementation

**Project start:** 2021 Q1

**Expected project completion:** 2022 Q2

**Completed outputs:**

- Elaboration of specific Terms of Reference and selection of consultants (contract signed in January 2021)
- Diagnosis of urban mobility survey on mobility practice

**Next expected outputs:**

- Mobility scenarios: business as usual, improved, and ambitious
- Urban mobility model
- Scenario selection and development of measures

# Highlights

## The SUMP assists Bouaké and Ivorian authorities in improving and securing urban mobility in Bouaké

In 2021, the team in charge of the SUMP focussed on two main tasks:

i. Realise an important campaign for data collection to give a precise picture of mobility habits of Bouakéans;

ii. Complete the diagnosis of urban mobility situation and key issues of the city.

This diagnosis has been approved by the Steering Committee in 2021, and the stakeholders are now prioritising the main challenges and working on the best measures to tackle them, with two scenarios: one leading to an improvement of the current situation, and a more ambitious one. In the first semester of 2022, the authorities along with the technical assistance team will discuss the scenarios for each issue, their cost and level of priority, to finalise an action plan with concrete measures and policies on the short, middle and long terms.

In the meantime, AFD allocated funding to a research project implemented by the *Institut de Recherche pour le Développement* (IRD, French) and the University of Bouaké that will collect data on road accidents. The data is collected by the police forces and health workers and will be automatically updated in an app to show in real-time how many accidents have occurred and where they have taken place. The results will be considered in the SUMP process.

# Al-Assima (Rabat-Salé-Temara), Morocco

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Urban area: **1,910 km²**

Population: **2,134,533 (2014)** | **Growth rate: 1.6%**

GDP per capita: **USD 3,217**

National GHG emissions per capita: **2.62 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

*Country capital city*

## Context

Rabat is the capital city of Morocco and the second largest region of the country. It is both the administrative and business center of the country. Rabat's agglomeration "Al Assima" includes the cities of Salé and Temara. Salé is the biggest cities among the three cities (982,163 inhabitants in 2014), followed by Rabat (577,827 inhabitants), and Temara (574,543 inhabitants). In 2024, the agglomeration's population is expected to reach 2,549,000 inhabitants, which will result in an increase of mobility.

Al-Assima has an existing mass transit system as well as a transport master plan. The local counterparts, Etablissement de la Coopération Intercommunale Al-Assima (ECIAA) and Société du Tramway de Rabat-Salé (STRS), have the mandate and responsibility to finance mass public transport infrastructure. They have the authority, with the central government guarantee, to borrow from international finance sources. Currently, there are no systems and procedures are in place to monitor, evaluate and report on urban mobility.

Al-Assima plans to develop a Sustainable Urban Mobility Plan (SUMP), by mandating a consultant. The future mobility plan will replace the former mobility plan of Rabat and integrate the whole urban area, including the cities of Salé and Temara.

- Structuring the project (governance, feedback on terms of reference)
- Providing STRS with assistance for developing urban mobility diagnosis and vision-building modules
- Assistance for integrating a participatory approach
- Capacity-building (throughout the process)
- Providing technical expertise for the review of SUMP deliverables
- Delivering an expertise programme for the definition and implementation of a local measuring, reporting and verifying greenhouse gas emissions approach, in link with thenational level (Rabat is one of the 3 pilot cities of this specific programme)

The technical assistance contributes to institutional strengthening through capacity building for implementation and a large stakeholder engagement process.

# Support from the Partnership

**Technical Assistance:** Support to pilot a Sustainable Urban Mobility Plan (SUMP)

**Funded by:** CEREMA

**Funding amount:** EUR 500,000 (in kind)

**Implemented by:** CEREMA through MobiliseYourCity Morocco

**Local counterpart:** Etablissement de la Coopération Intercommunale "Al-Assima" ECIAA, Société du Tramway de Rabat-Salé (STRS)

# Supported activities:

Technical assistance to support STRS and the SUMP

- Deliverable reviews
- Support during the SUMP committees

# Status of implementation

**Project start:** 2021 Q4

**Expected project completion:** 2023 Q1

**Completed outputs:**

- Elaboration of SUMP ToRs

**Next expected outputs**

- Diagnosis report
- SUMP elaboration study

# Highlights

## SUMP preparation study finally starts after being delayed due to pandemics

After the procurement of the SUMP had been delayed in 2020 due to the COVID-19 pandemic, the study on the elaboration of the SUMP started in September 2021. It is planned for a duration of 18 month (until March 2023). As of February 2022, the SUMP is in the diagnosis phase.

# Casablanca, Morocco

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Grand Casablanca urban area: **1,117 km²**

Population: **4,047,066** | Growth rate: **0.85%**

GDP per capita: **USD 2,832 (2016)**

Modal Share

- **Formal public transport: 13%**
- **Informal public transport: 6%**
- **Walking: 60%**
- **Private cars: 13%**
- **Private motorbikes or 2-wheelers: 4%**
- **Taxis: 4%**

National GHG emissions per capita: **2.62 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

*Region capital city*

## Context

Located in the western part of the country, Casablanca is the largest city in Morocco and operates as the country's economic capital, with the industrial and service sectors contributing a viable share in the country's GDP (World Bank, 2017). Statistics show that the region of Casablanca-Settat alone accounted for 34% of Morocco's economy in 2014, positioning the city as the backbone of the country's economy.

Regardless of serving as an important financial hub, the metropolitan area is facing exponential mobility challenges such as increasing traffic congestion, degrading air quality and a public transport network unable to meet the growing demands and take its fair share of the 7.8 million trips taken daily in the city. In 2005, only 15% of inhabitants used public transport system to commute. Since then, the Moroccan government and the municipality of Casablanca have committed to significantly increasing access to mass public transport by tackling various underlying issues.

In line with this objective, the municipality formulated a strategic development plan focusing on expanding and improving existing tram and bus networks to integrate different neighbourhoods, and foreseeing the development of approximately 100 km of new public transport network by 2025, consisting of four tram lines and two rapid bus lines (Casa Transports SA, 2020). The highlight of this project was the implementation of tramway line 1 (31 km in 2012) and line 2 (19 km in 2018) to develop efficient and green public transport. Additionally, tramway line 3 (14 km) and line 4 (18km) and the BRT lines 5 and 6 are in the pipeline, expected to operate fully in 2022. Alongside the tram lines, the project features a green corridor and improving pedestrian facilities to ensure enhanced safety and security of citizens. By strengthening various components of the public transport system, the city is committed to reducing private vehicle ownership and cut on GHG emissions in line with Morocco's NDCs.

There is an existing transport master plan or similar document. Casa Transports, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It has authority to borrow from international finance sources. Systems and procedures are in place to monitor, evaluate and report on urban mobility.

The technical assistance has contributed to institutional strengthening by supporting Casa Transports in the stakeholder engagement process.

# Support from the Partnership

**Technical Assistance:** Project management assistance to the Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 90,000 (total cost of the SUMP EUR 1,500,000)

**Implemented by:** AFD through the MobiliseYourCity Morocco project

**Local counterpart:** Casa Transports

**Finance leverage:** EUR 100,500,000

**Supported Activities:**

The objective of the MobiliseYourCity service is to assist Casa Transports in piloting the SUMP study in order to contribute to its technical quality, its implementation, its coherence with the MobiliseYourCity orientations as well as with the different approaches at national and local level in terms of low-carbon transport planning.

- Mission 1: Evaluation and assessment of the urban mobility plan 2004
- Mission 2: Data collection, surveys, and counts
- Mission 3: Realization of the diagnosis
- Mission 4: Definition of scenarios and choice of a scenario
- Mission 5: Formalization of the SUMP Project
- Mission 6: Design and implementation of a mobility observatory

# Status of implementation

**Project start:** 2017 Q3

**Expected project completion:** 2022 Q4

**Completed outputs:**

- Inventory and diagnosis; goal setting and strategy development
- Scenario elaboration
- Formalization of the SUMP project

**Next expected outputs**

- Approval of scenario setting
- SUMP action plan
- Monitoring and Reporting – MRV

# SUMP key measures and cost estimates

The following table gives an overview of the measures and cost estimates identified at a preliminary stage of the SUMP process.

| Measure | Cost Estimate |
|---|---|
| Implementation of a Transport Authority | EUR 1,000,000 |
| Mass Transit lines implementation | EUR 4,600,000,000 |
| Bus network and taxis reorganisation and related bus lane | EUR 140,000,000 |
| Circulation plan and parking policy upgrade | EUR 250,000,000 |
| Non-motorized transport policy upgrade | tbd |
| Intermodality facilities upgrade | tbd |
| Freight regulation enhancement | tbd |
| Transversal: improve road safety and reduce private car disturbance | tbd |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

| Urban transport investment measures | CAPEX Estimate |
|---|---|
| Public transport and NMT | EUR 4,741,000,000 |
| Street shaping urban roads and traffic management | EUR 250,000,000 |
| Other measures | EUR 0 |
| **Total** | **EUR 4,991,000,000** |

# Finance leverage

| Financing resulting from the SUMP | Source | Amount |
|---|---|---|
| Line 3 and 4 of the tramway networks | AFD Loan | EUR 100,000,000 |
| Technical assistance for Casa Transport | AFD Grant | EUR 500,000 |

### Projected impacts

| Indicator | Impact 2030 (SUMP vs BAU) | Baseline - 2019 | Projected 2030 BAU | Projected 2030 SUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -0,1 Mt $CO_2$eq | 1,05 Mt $CO_2$eq | 1,50 Mt $CO_2$eq | 1,40 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | -17 kg $CO_2$eq / capita | 262 kg $CO_2$eq / capita | 257 kg $CO_2$eq / capita | 240 kg $CO_2$eq / capita |

# Highlights in the past year

## Putting public transport in the spotlight

Based on a shared observation that public transport infrastructures will be saturated by 2030, the study has established major guidelines aimed at reducing forced walking and private car travel, while increasing the modal share of public transport from 13% to 25%. Its first conclusions indicate that massive investments will be necessary for the implementation of an ambitious trust and company service provider's network at the level of the conurbation, including an integrated public transport network in physical and fare terms, composed of an east-west heavy metro line crossing the conurbation, a network of metropolitan trains serving the peri-urban territories and a complementary network based on tramways and bus-rapid-transit

In November 2021, the experiences from the construction of the tramway in Casablanca were shared with other members of the MobiliseYourCity Partnership during the Mastering Mobility Month. The training is available online in French here.

The expansion of the light-rail system in Casablanca is supported by a 100 million euros (1,.1 billion dirhams) loan agreement from the Agence Française de Développement (AFD). The loan will be used to build to new lines (T3 and T4) of the tramway in Casablanca. It is combined with a 500,000 euro (5,5 million dirhams) technical assistance grant with Casa Transports.

# Khouribga, Morocco

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Urban area: **52 km²**

Population: **216,397** | **Growth rate: 0.65%**

GDP per capita: **USD 3,237**

National GHG emissions per capita: **2.62 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

## Context

Khouribga is an inland urban area and an industrial hub in central Morocco. Located at 120 km from Casablanca and 154 km from Rabat, Khouribga serves as the capital of Khouribga province in Béni Mellal-Khénifra region. The city emerged in 1923 by French authorities after the discovery of rich mineral reserves and holds a strong position as the biggest exporter of phosphate in the world. Due to various mining sites in the region, the local economy is heavily dependent on the mining sector as it contributes significantly to Morocco's economy accounting for about 10% of the GDP and for 72% of national phosphate exports in 2013.

The city is located at the intersection of two major roads. Khouribga has a small railway station for interurban transport located in the centre of the city. It is used for passenger and freight transport. The railway station was one of the stops of the journey of the climate train from Casablanca to Safi during the COP22 in Morocco, raising awareness for sustainable transport. Apart from a city bus, there is no existing mass transit system in the city.

There is no existing transport master plan or similar document. The Municipality of Khouribga, the local counterpart, does not have the mandate and responsibility to finance mass public transport infrastructure, even though it has the authority to borrow from international finance sources. Systems and procedures are not in place to monitor, evaluate and report on urban mobility.

## Support from the Partnership

**Technical Assistance:** Project management assistance for Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 100,000

**Implemented by:** AFD through MobiliseYourCity Morocco

**Local counterpart:** Commune de Khouribga

**Supported Activities:**

- Support the Khouribga Commune in the preparation, launching and piloting of the SUMP study to contribute to its technical quality, its implementation, its coherence with the MobiliseYourCity orientations as well as with the different approaches at the national and local level in terms of low-carbon transport planning.
- Ensure that the SUMP study is well articulated with opposable planning documents (urban planning, environment).

# Status of implementation

**Project start:** Q2 2019

**Expected project completion:** Q4 2022

**Completed outputs:**

- Terms of reference for the SUMP
- Procurement process to hire a consultant for the SUMP study finalized
- Launching the SUMP process with local consultant

**Next expected outputs**

- SUMP process

# Highlights

## Kicking-off the SUMP process

After a local consulting company was selected in 2020, the SUMP process was launched in 2021.

# Maputo, Mozambique

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 2,200 km²

Population: 2,541,000 | Growth rate: +2,5%

National capital city

GDP per capita: USD 1,376

Modal Share

- Formal public transport: 9.2%
- Informal public transport: 32.9%
- Walking/cycling: 45.9%
- Private cars: 10.2%
- Private motorbikes or 2-wheelers: 0.2%
- Freight vehicles: 0.7%

National GHG emissions per capita: 1.24 (tCO2eq)

## Context

Maputo is the capital of Mozambique and a port city located on the Indian Ocean coast in Southern Africa. The Maputo Metropolitan Area is the political and commercial centre, and the most populated area of Mozambique, where approximately 8.8% of the country's population lives. Furthermore, the Metropolitan Area of Maputo includes the densest municipality (Maputo city), the most populated municipality (Matola city), and the largest municipality in the country (Boane city). The district of Marracuene and Maputo city is the most urbanised area of the agglomeration. The major economic activities in Maputo are trade, transportation, communication, and manufacturing. The attraction of economic opportunities in the capital has therefore resulted in population growth which is spiralling into neighbouring cities and districts. There is continuous growth further away from the central area towards the outskirts of Maputo.

The current demand for public transport is greater than the offer, which leads to an increase in private vehicles ownership, traffic congestion and irregular parking on public roads. The poor state of road infrastructures reduces the quality and durability of public transport and the fluidity of traffic. The city also lacks proper infrastructure for active mobility, a high number of road accidents and a lack of security for women in transport. These mobility issues can undermine the economic development of the area, due to the limited access to employment opportunities, poor health, and time-consuming trips. This situation especially affects low-income populations and leads to a severe impact on air quality and climate.

# Transport system

An urban transport master plan for the Great Maputo area has been prepared under JICA funding in 2014. According to this document, the two dominant transport modes were walking (46%) and chapas/minibus (33%). Chapas is an informal public transport, owned by private operators and following a "fill and go" system, usually waiting at terminal areas until being fully loaded. 4,500 chapas were licensed and operating in the Maputo Metropolitan Area in 2004. However, many additional chapas are operating without licenses.

The master plan forecasts significate growth in mobility demand in the forthcoming years. Urban trips are expected to double between 2012 (3.3 million trips/day) and 2035 (expected 6.7 million trips per day). As a result, congestion is expected to increase to unbearable levels if no action is taken to make mobility patterns more efficient in Maputo. The 2014 master plan proposes a prioritised action plan to tackle these mobility challenges that feed into the SUMP. The main proposed actions are the development of a mass rapid transit network combined with road network improvements.

# Institutional context

The Metropolitan Transport Agency of Maputo (AMT – Agencia Metropolitana de Transportes de Maputo) was created in 2017 through Decree No. 85/2017, and it started operating in August 2018 after the appointment of the Board of Directors (PCA). AMT has the responsibility in the Metropolitan Area of Maputo to plan, implement and manage collective public transport, and to respond to the interests of municipalities, provincial, district governments and private partners in the Maputo metropolitan area, as well as the central government, in matters of public transport.

AMT's precise role, competence, and financial framework are still to be precisely defined. Refined objectives shall be reflected in a strategic plan for the AMT itself, aiming at the structuration and consolidation of the authority. A partnership with UITP, under World Bank funding, has started to develop such a strategic plan but is currently on hold. The AMT staff is supported by the think tank Waza, involved as a partner under the T-SUM project. The AMT currently does not have the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are not in place to monitor, evaluate and report on urban mobility.

In this challenging environment, some of the main issues for public stakeholders to tackle are the lack of a common metropolitan vision, poor coordination between stakeholders, limited technical and institutional capacities, and limited options for tax collection and revenues from the transportation system. The Transport Agency for Maputo Metropolitan Area, together with the municipalities of the Metropolitan Area, want to develop a Sustainable Urban Mobility Plan (SUMP) to work on the current issues related to urban mobility, and to expand the public transport system to all neighbourhoods. The plan shall also improve access routes, consolidate the overall transport system and help with the relationship with other main stakeholders. In the organisational aspect, the SUMP assignment shall support AMT in the finalisation of the institution structure strategic plan that is under formulation.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Implemented by:** AFD through the MobiliseYourCity AFD Africa Program

**Local counterpart:** Agência Metropolitana de Transporte de Maputo (AMT)

**Supported activities:**

- SUMP preparation for Maputo Metropolitan Area, managed by the local transport authority, Agência Metropolitan de Transportes de Maputo (AMT)

**Other related activities supported by AFD outside of MobiliseYourCity scope and financing:**

- Technical Assistance to the AMT (Financing of one Senior and one Junior position)
- Quick wins actions

# Status of implementation

**Project start:** 2021 Q1

**Expected project completion:** 2023 Q2

**Completed outputs:**

- Mobilise Days (2019)
- Elaboration of Terms of Reference
- Launch of the consulting call
- Evaluation of the proposals
- Selection of the consultant and administrative assignment of the mission (February 2021)
- Beginning of the assignment
- Inception phase (completed in January 2022)

**Next expected outputs:**

- Diagnosis phase (July 2022)
- Vision and scenario phase (December 2022)
- Action plan and final SUMP (June 2023)

# Highlights

## Despite the difficulties related to the COVID-19 pandemic, Great Maputo's SUMP project kicked off

The Maputo SUMP study officially started in February 2021. A first inception mission was conducted in April 2021, and a draft inception report was submitted in June 2021. However, validation staggered due to a lengthy process at the beneficiary level and to a lockdown in Maputo during summer 2021 linked to the COVID-19 pandemic. The inception report was at the end approved in January 2022. a lockdown in Maputo during the summer of A 3 days workshop took place in June 2021, co-organized with T-SUM project, focusing on the identification of challenges regarding mobility in the Maputo Metropolitan Area. A second 3 days workshop took place in November 2021, still co-organized with T-SUM, to identify a possible vision for Maputo Metropolitan Area SUMP.

# Dakar, Senegal

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 550 km2

Population: 3,835,019 (2020) | Growth rate: +2.8%

GDP per capita: USD 1,438 (2019)

Modal Shares (in 2015)

- Walking: 70%
- Formal public transport: 11.7 %
- Informal public transport (minibuses): 6.8 %
- Informal collective taxis: 3.5 %
- Private cars: 4.2 %
- Formal Taxis: 3.0 %
- Private motorbikes or 2-wheelers: 0.8%

National GHG emissions per capita: 0.6 tCO2eq at national level in 2016: 2.1 tCO2eq/capita

Exposure to climate change: MEDIUM

## Context

The Dakar region is a conurbation that has developed quickly including successively the cities of Dakar, Guédiawaye and Pikine, and Rufisque. The region brings together most of the administrative, political, economic and cultural functions of the country with over 3.8 million inhabitants in 2020. The region of Dakar hosts 25% of the country's total population and 50% of the urban population. Demographic projections anticipate 5 million inhabitants by 2030, with a growth rate twice as high as over the past thirty years.

The high density of the agglomeration (5,739 inhabitants/km²) hides significant disparities between the different urban areas, to which must be added strong territorial imbalances due to the peninsular geography and poorly controlled urbanization. The concentration of jobs in Dakar city centre, which hosts the administrative centre, the port, and a large part of the industrial and commercial enterprises, enhances the pendular nature of mobility. Also, the income inequality between Dakar and the suburban cities results in a counter-intuitive increased use of private vehicles where the city is densest.

The limited space on the already densely built-up Dakar peninsula, as well as road congestion, have encouraged the government to launch ambitious urban projects in the outskirts of the current agglomeration, such as the Diamnadio urban pole, aimed at becoming the future administrative centre of Senegal.

Although walking accounts for the overwhelming majority of trips (70%), it is a mode that is imposed rather than chosen in the majority of cases. Indeed, walkability is undermined by the absence, poor condition or congestion of sidewalks, as well as by the obstacles formed by larger roads. The development of cycling is hindered by a number of factors, but mainly by its dangerousness for users, due to the inadequacy of the infrastructure and the unsafe road conditions. The poor conditions for users of active modes encourage a modal shift to private vehicles, which are gaining ground.

Besides taxi services, a variety of public transport options are available in the agglomeration of Dakar:

- The public operator Dakar Dem Dikk (DDD), a public transport society operating 42 standard bus lines.
- 14 formal private operators (called ***economic interest groups***), operating a network 64 minibus lines, grouped under the AFTU's (Association pour le Financement des Transports Urbains), an organisation created for the renewal fleet program.
- Informal minibuses (***Cars Rapides*** and ***Ndiaga Ndiaye***) operators, that did not join the renewal fleet program.
- ***Clando*** collective taxis operators, also members of the informal sector but currently targeted by an ongoing project to promote their formalisation.
- The ***Petit Train de Banlieue***, a public rail operator, in charge of rail services between Dakar and its suburbs, until the expected commissioning of the new Regional Express Train.

Two mass rapid transit projects are currently implemented in Dakar:

- An Express Regional Train between Dakar downtown and the Blaise Diagne International Airport located in Diamniadio at 36 km distance
- A BRT line between Dakar downtown and Guédiawaye suburb

The total number of trips within the region of Dakar stands at 3.36 trips per person on average on weekdays. Of these trips, 1.0 trips are made using motorized modes.

Mobility in Dakar is organised by the ***Conseil Exécutif des Transports Urbains de Dakar*** (CETUD), which is an operational transport organizing authority. Its mission is to organize and regulate the urban public transport offer and demand in order to create an economic environment for local operators and to promote the emergence of healthy and sustainable competition in accordance with the public transport policies defined by the state for the region of Dakar.

CETUD has the mandate and responsibility to finance mass public transport infrastructure. It has the authority to borrow from international finance sources. Systems and procedures are in place to monitor, evaluate and report on urban mobility.

CETUD established a transport master plan in 2007, which is being evaluated and updated as part of the SUMP project supported by MobiliseYourCity. Demographic, economic, and social changes in Dakar, the emergence of a new strategic framework (Urban master plan of Dakar, 2035), as well as the collection of new data (household surveys in 2015) led CETUD to revise the existing transport master plan (PDUD) established in 2007 in order to have a renewed strategy for urban mobility.

The objective of the support by the MobiliseYourCity partnership is to assist CETUD in the evaluation of the PDUD and its revision into a Sustainable Urban Mobility Plan (SUMP) 2020-2035.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** FFEM

**Funding amount:** EUR 400,000

**Implemented by:** AFD through the MobiliseYourCity Africa: Support of a SUMP preparation process for the city of Dakar, managed by the local mobility authority, Conseil Exécutif des Transports Urbains de Dakar (CETUD)

**Local counterpart:** CETUD (Conseil Exécutif des Transports Urbains de Dakar)

**Supported Activities:**

- Update the existing urban mobility plan into a SUMP which:
  - » Builds upon existing studies, plans and documents
  - » Is aligned with the national urban mobility strategy
  - » Is the result of a participatory process
  - » Is ready to be adopted by the CETUD and the relevant authorities

# Status of implementation

**Project start:** April 2020

**Expected project completion:** Q2 2022

**Completed outputs:**

- Evaluation of the existing transport master plan report
- Inception report
- Diagnostic report
- Scenario and financing report

**Next expected outputs**

- Vision, objectives, and action plan of the SUMP
- Monitoring and reporting of the SUMP
- Reports about the participatory process of the SUMP

# Core impact indicators baselines

| Indicator | Baseline (2015) |
|---|---|
| **Total annual transport related GHG emissions** (Mt $CO_2$eq) | 0.924 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita** (kg $CO_2$eq) | 243 kg $CO_2$eq |
| **Access to formal public transport**<br>Proportion of the population living **300** meters or less of a public transport stop | 56%[1] |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 45 µg/m³ of PM2.5 |
| **Modal share of sustainable modes of transport**<br>Modal shares of trips by public transport, walking and cycling | Walking: 70%<br>Cycling: 0%<br>Formal public transport: 11.7 %<br>**Total share of sustainable modes: 81.7 %** |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 2.9 fatalities / 100,000 inhabitants (2014 ) |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport (by the second quintile income group) | 14.3% (2015, EMTASUD) |

1 Obtained by aggregation of data for each city of the urban area, weighted by population.

# Highlights in the past year

## Despite delays and challenges related to COVID, the SUMP progressed

As the pandemic started shortly after the inception of the SUMP project in April 2020, the initially planned schedule for the SUMP was interrupted. As the circumstances did not allow the consultant to travel to Dakar, much work was accomplished remotely. For instance, interviews with actors on site were transferred to written questionnaires and virtual meetings. Despite these challenges, the SUMP process progressed in 2021 with the conclusion of the diagnosis report. In early 2022, the first scenarios were developed and introduced to the committees in charge of the SUMP development.

## The involvement of various stakeholders makes the SUMP a recognised and valuable plan

Throughout the SUMP process, the responsible committees and the SUMP task force put a strong focus on involving diverse stakeholders in the development of the plan. Until early 2022 a total of ten workshops were conducted with private and institutional actors as well as the population. The topics of the workshops covered a broad variety of SUMP related issues, including the sharing of roads and the importance of gender for transport. The results from the diagnosis were also presented during a public event to collect feedback on the outcomes. The success of these participatory events is visible through the acknowledgement that the SUMP was able to gain. While the urban mobility plan from 2007 was unknown to some stakeholders, their involvement in the process of preparing the SUMP led to an increased awareness for the aims of the plan.

## A multi-modal transport system that favours public transport is key for sustainable mobility

The road network in the densely populated districts of Dakar is already under a lot of pressure under the current motorisation rates. At the same time, the majority of trips are still taken by foot as large parts of the population cannot access or afford public transport. In this context, the collaboration of CETUD with paratransit operators to support the professionalisation and upgrading of their buses, as well as the planned development of a BRT system, feed into the SUMP process. Approaches for increasing a multi-modal transport system that focuses on public transport also include the development of a fare system adjusted to the household income and the improvement of conditions for walking and cycling.

## Urban planning and transport planning go hand in hand as part of the SUMP

Urban development is a key driver for the increasing transport demand in Dakar. Differences in the density among urban districts influence mobility and transport systems. To effectively integrate land use and transport planning, the Ministry of Urban Planning is an essential partner in the SUMP development and has been involved from the start. The objectives of the urban master plan (Dakar 2035) directly feed into the SUMP process. Especially in the less densely populated districts in the outskirts of Dakar, the SUMP aims to focus on the development of compact city structures according to the principles of the 15min city.

# Antananarivo, Madagascar

Partner city

Status of the project: **upcoming technical assistance**


## Basic Information

Urban area: **85,01 km²**

Population: **3,209,933** | **Growth rate: +4.84%**

GDP per capita: **USD 522**

National GHG emissions per capita: **0.13 ($tCO_2eq$)**

*Country capital city*

## Context

Antananarivo, also known by its shorthand form Tana, is the capital and largest city of Madagascar. It is located in the centre of the Island at 1,280 m above sea level and concentrates the bulk of the country's industrial and administrative activity.

The city is subject to high demographic growth leading to overcrowding and traffic congestion, as well as issues of waste management, extreme air pollution, security, public water and electricity shortage among others. Limited funds and management issues have hampered the effort of the local authority to manage these issues linked to the rapid population growth.

According to a public report by the French Embassy, walking - which accounts for more than 60% of travel in Antananarivo- is the preferred mode of travel. Paratransit constitutes the bulk of motorised trips, of which *taxi-bé* minibuses account for nearly 72%.

There is no existing mass transit system in the city to deal with the rising travel demand.

The city suffers from severe road congestion. Urban mobility issues are linked both with population growth, the low level of infrastructure development and the lack of support and regulation for the *taxi-bé* network. The city currently does not have an updated urban mobility planning document to deal with these issues.

Urban transport and suburban transport are respectively organised by the urban commune of Antanarivo (CUA), and the suburban transport agency (ATT), which depends on the national level. The overlapping of certain competences, the lack of financial means and the outdated regulations make the organisation of urban mobility more complex.

Significant efforts have been made in the past to address mobility challenges in the Malagasy capital. Unfortunately, the Urban Mobility Improvement Programme (PAMU) launched in 2008 has not led to the hoped-for improvement in rolling stock. Numerous studies have been carried out in recent years, notably on the creation of a transport organising authority, an economic analysis of the *taxi-bé*, the definition of specifications and the structuring of operators for the acquisition of rolling stock, the implementation of a ticketing system, and the training of operators. More recently, the World Bank has launched a study to produce a master plan for urban transport, proposing an articulation of the different modes of travel and a coherent transport network.

In addition to the studies and plans, the city is invested in several recent or ongoing ambitious projects. They include an electric cable transport project, the construction of an urban train network, the inauguration in 2021 of a by-pass road, a Bus Class pilot project to improve the taxi-bé service, as well as a project initiated in 2011 and supported by AFD (33 million euros) and the EU (3 million euros to improve pedestrian mobility and traffic on certain roads in the urban area.

The technical assistance provided under the Partnership aims to organise an *urban mobility forum* in Antananarivo, enabling all the involved actors to coordinate around a common roadmap.

## Support from the Partnership

**Technical Assistance:** Urban mobility forum

**Funded by:** AFD

**Funding amount:** EUR 35,000

**Implemented by:** Codatu

**Local counterpart:** Commune Urbaine d'Antananarivo (CUA)

**Supported activities:**

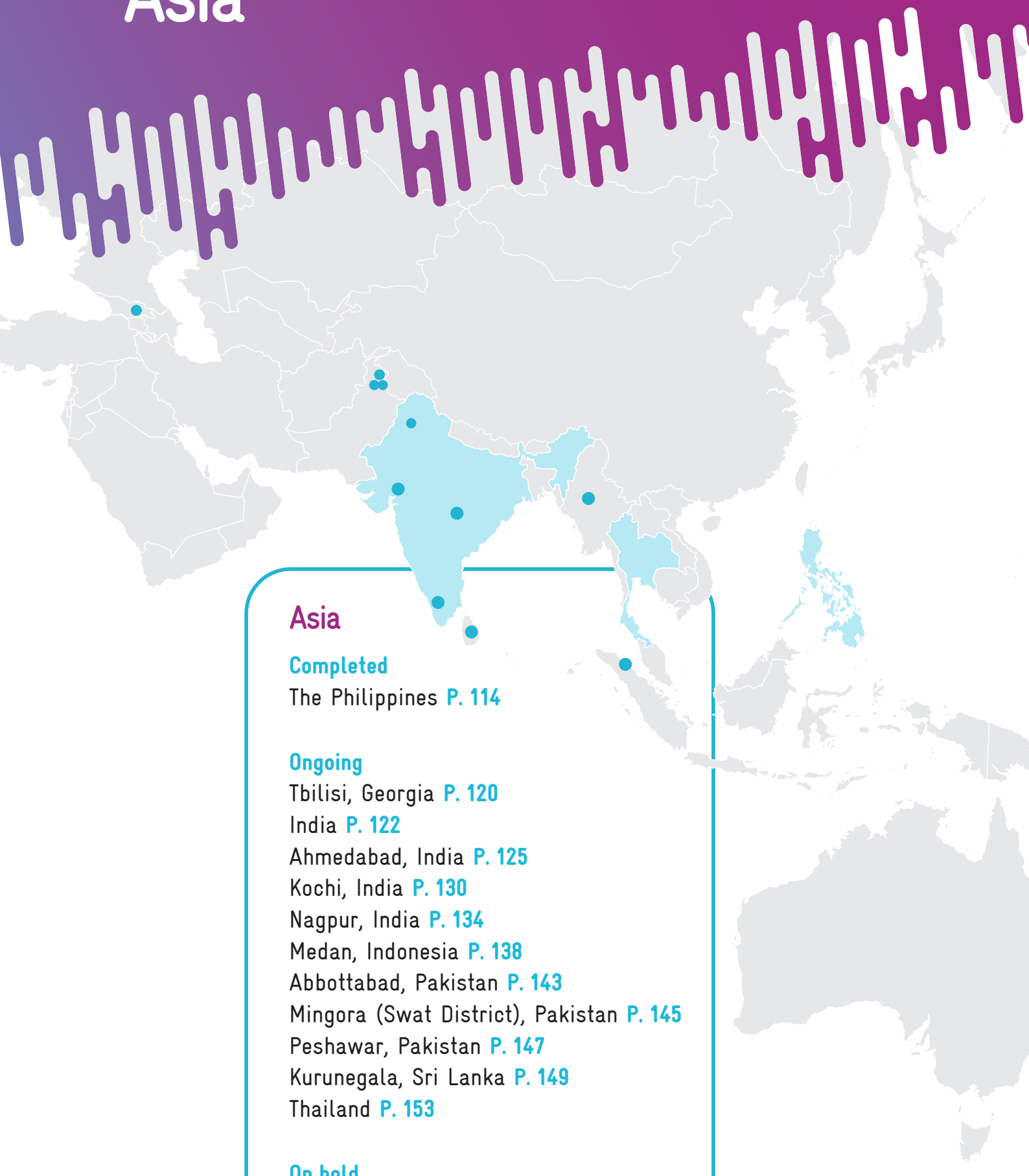
- Urban mobility forum
- Urban mobility roadmap

## Status of implementation

**Project start:** 2022 tbd

**Expected project completion:** 2022 tbd

# Asia



## Asia

### Completed



### Ongoing



### On hold

# The Philippines

Partner city

Status of the project: **completed technical assistance**


## Basic Information

Population: **109,035,343 (May 2020) | Growth rate: 1.63%**[1]
**Percent of urban population: 51.2%**[2]

GDP per capita: **USD 3,299**[3]

Percentage of the population living below the national poverty lines: **23.7%**[4]

Annual average infrastructure expenditures as percent of GDP: **5%**[5]

Nationally Determined Contribution (NDC): **75% (2.71% unconditional, 72.29%) of a projected 3,340.3 $MtCO_2e$ (2020-2030)**[6]

National GHG emissions per capita: **1.39 ($tCO_2eq$)**

Proportion of transport related GHG emissions: **26.1% of energy-related emissions**

Exposure to climate change: **HIGH**

## Context

The Philippines is rapidly urbanizing, with 51.2% of its over one hundred million population now living in just 145 cities—33 of which account for more than 70% of the national income. The country has a relatively young population (60% under 30 years old) and, until 2019, an average economic growth rate of over 5% per year.

Active transport and public transport have historically been underfunded on the national and local levels, despite these modes comprising ~80% of trips in Metro Manila and the surrounding provinces. The COVID-19 recovery budget includes increased spending on these modes, which can translate into long-term improvements. In 2018, it was estimated that congestion was costing the economy over PHP 3.5 billion daily in lost productivity, time, and unnecessary vehicle costs—not counting other effects such as GHG emissions and traffic collisions.

1 https://psa.gov.ph/content/2020-census-population-and-housing-2020-cph-population-counts-declared-official-president#:~:text=The%20Philippine%20Statistics%20Authority%20(PSA,Philippines%2C%20pursuant%20to%20Proclamation%20No.

2 https://psa.gov.ph/content/urban-population-philippines-results-2015-census-population

3 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=PH

4 https://neda.gov.ph/statement-on-the-2021-first-semester-official-poverty-statistics/#:~:text=As%20reported%20by%20the%20Philippine,more%20Filipinos%20living%20in%20poverty

5 https://www.bworldonline.com/infrastructure-gets-budget-boost/

6 https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Philippines%20First/Philippines%20-%20NDC.pdf

- The Philippines faces a range of challenges constraining the ability of the country to transition towards sustainable urban mobility. These challenges include
- Outdated policies and regulations
- Insufficient collaboration among agencies and lacking capacities of public institutions
- Insufficient capacities within government agencies to plan, implement, and monitor initiatives
- Uncertain funding sources for sustainable urban mobility
- Limited data to monitor and properly plan sustainable urban mobility initiatives
- Limited planning and design guidelines for sustainable urban mobility initiatives

The Philippine Urban Mobility Programme (PUMP) provides mechanisms by which the national government is able to support local governments planning and implementing sustainable urban mobility systems, with focus on public transport, active transport, urban freight, travel demand management, and transit-oriented development. The Programme considered inputs from national- and local-level stakeholders, was developed closely with the Department of Transportation. It has likewise been approved by the National Economic and Development Authority—the country's oversight planning agency—who recognized that it was in line with the National Transport Policy released in 2017.

The GIZ-run TRANSfer project provides ongoing technical assistance for the programme's implementation through several activities such as the data collection toolkit development, which aims to present government partners with a manual that identifies sustainable urban mobility indicators and how to gather the necessary datapoints to monitor them.

In 2022, the approved national budget for road-based transport is at PHP 13.3 billion, higher that the PHP 12.9 billion from 2021 (counting both the COVID-19-recovery fund and usual budget).[7] Of this PHP 13.3 billion, PHP 7 billion is for public transport service contracting, PHP 1.8 billion is for the Public Utility Vehicle (PUV) Modernization Program including social support, and PHP 2 billion is for active transport.

## Support from the Partnership

**Technical Assistance:** National Urban Mobility Program (NUMP)

**Type of NUMP:** Mixed NUMP

**Funded by:** BMUV

**Funding amount:** EUR 1,500,000

**Implemented by:** GIZ through the TRANSfer III Project

**Local counterpart:** Department of Transportation

**Finance leverage:** EUR 3,403,000,000

**Main purpose of the NUMP:**

- Offer cities a general enabling framework to formulate, adopt, and implement Sustainable Urban Mobility Plans (SUMPs)
- Identification of measures to support improvements in active transport, travel demand management, transit-oriented development and urban freight

7 https://docs.google.com/spreadsheets/d/1rhd2weqzt4d5qdcVVlUjnMBsDECoV_CaDrl7k2zFa-E/edit#gid=2058725729

**Vision:**

- Social objective: 'A people-first approach that ensures inclusive, comfortable, safe and dignified access to public services';
- Environmental objective: 'An urban transport system which reduces its negative impacts imposed on the environment and on public health towards healthy cities';
- Economic objective: 'Efficient, affordable and economically sustainable transport, which supports economic vitality for the individual and for the city'.

**Supported activities:**

- Status Quo Report
- Visioning Workshops with national government agencies
- Capacity building workshops (including study tours and online trainings) with government, academia, and private sector
- Technical studies for government (e.g., improvements in public transport operations, building on the Jeepney+ NAMA, service contracting for public transport, production of base maps)
- Development of a Data Collection Toolkit/Manual

# Status of implementation

**Project start:** 2017 Q1

**Project completion:** 2019 Q4

**Completed outputs:**

- EDSA-Bus Case Study: Operations and Business Model (2018 Q4)
- Public Utility Vehicle Modernization Program Early Evaluation (2019 Q4)
- Philippine Urban Mobility Programme Concept Document (2019 Q4)
- Sustainable Urban Mobility Data Collection Toolkit (beta version: 2021 Q4)[8]

8 https://bit.ly/PHTransportDataCollection (https://mobilitydatatoolkit.notion.site/mobilitydatatoolkit/Sustainable-Urban-Mobility-Data-Collection-Toolkit-for-the-Philippines-f10af05a5c9748eeb642ab157619e7de)

# NUMP key measures and cost estimates

The following table highlights the most significant measures identified in the NUMP.

| Measure | Cost Estimate |
|---|---|
| Develop National walking and cycling Policy | EUR 200,000 |
| Collect data to enable planning | EUR 300,000 |
| Increase dedicated staff in Department of Transportation & Local Government Units | EUR 55,000,000 |
| Increase focus on NMT in planning process | EUR 200,000 |
| Address lack of political support | EUR 100,000 |
| Continued ring-fenced funding for walking and cycling projects in HUCs | EUR 500,000,000 |
| Develop NMT guidance | EUR 200,000 |
| Tackle behaviors that discourage walking and cycling | EUR 5,000,000 |
| Train existing and future staff on planning for walking and cycling | EUR 1,000,000 |
| Jeepney modernization program | EUR 5,800,000,000 |
| Develop freight data collection mechanism | EUR 200,000 |
| Develop and implement vehicle standards | EUR 300,000 |
| Establish national freight operator dialogue forum | EUR 300,000 |
| Support consolidation and professionalization of the freight sector | EUR 300,000 |
| Establish a motor vehicle inspection system | EUR 340,000,000 |
| Promote and assess modern fleet pioneers | EUR 200,000 |
| Explore scrappage and buyback program | EUR 200,000 |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the NUMP.

| Urban transport investment measures | CAPEX Estimate |
|---|---|
| Public transport and NMT (Active Transport) | EUR 62,000,000.00 |
| Street shaping urban roads and traffic management | Unknown |
| Other measures (Urban Freight) | EUR 1,500,000.00 |
| **Total** | **Unknown** |

# Finance leverage

| Financing resulting from the NUMP | Source | Amount |
|---|---|---|
| Public Utility Vehicle Modernization Program | Private sector investments | EUR 3,160,000 |
| Loans | Local development banks | EUR 36,000,000 |
| Pilot phase of Jeepney+ NAMA (equity subsidy and social support programme) | | EUR 56,000,000 |
| Support for local production of public transport manufacturer | National government | EUR 150,000,000 |
| | Development Bank of the Philippines | EUR 8,140,000 |

| Associated financing supporting measures in the NUMP | Source | Amount |
|---|---|---|
| Budget for Metro Manila Greenways | National government | EUR 136,000,000 |
| Budget for National Greenways | National government;<br>ADB technical assistance loan | EUR 175,000,000 |
| Budget for Green Green Green Program | National government | EUR 45,300,000 |
| Budget for bikeways | National government (through Bayanihan 2) | EUR 22,900,000 |
| Budget for public transport service contract | National government (through Bayanihan 2) | EUR 97,200,000 |
| Budget for common station connecting LRT 1, MRT 3, MRT 7 and Subway | National government | EUR 48,800,000 |
| Budget for active transport | National government (2022 General Appropriations Act) | PHP 2 billion / EUR 34,250,000 |
| Budget for public transport service contract | National government (2022 General Appropriations Act) | PHP 7 billion / EUR 120,000,000 |
| Budget for PUV Modernization | National government (2022 General Appropriations Act) | PHP 1.8 billion / EUR 30,800,000 |

# Projected impacts

| Indicator | Impact 2030 (NUMP vs BAU) | Baseline - 2020 | Projected 2030 BAU | Projected 2030 NUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -2.5 Mt $CO_2$eq | 20 Mt $CO_2$eq | 29.5 Mt $CO_2$eq | 27 Mt $CO_2$eq |

# Highlights

As part of its pandemic recovery plan, the government released a four-pillar socioeconomic strategy covering the following areas and amounting to at least PHP 2.57 trillion: financial aid, improvements to healthcare, monetary actions, and job creation. This includes the *Bayanihan to Recover as One Act*, a law which allocates emergency funding of PHP 5.58 billion for public transport service contracts and PHP 1.32 billion for bike lanes and sidewalks.

COVID-19 has highlighted the need for better active transport infrastructure and policies, more green spaces, and stronger government financial support for public transport. However, the continued spread of the virus and widespread lockdowns have also affected implementation of the PUV Modernization Program and any urban freight initiatives.

In 2022, local governments are also expecting an increase in their share of internal revenue allocation to further support decentralization.[9]

The Philippines NUMP continues to be implemented in coordination with the Department of Transportation and the National Economic and Development Authority, providing insights on active transport and public transport measures, as well as guidance on sustainable urban mobility indicators.

In 2021, a Sustainable Urban Mobility Data Collection Toolkit was developed with the purpose of providing suggestions on methodologies, tools, and governance aspects for the collection of urban transport data. The tool will enable stakeholders at the national and local level to collect urban transport data that will inform the planning of urban transport systems and monitoring of the NUMP implementation.

## Leveraging the required funds for implementation is still a major challenge

Some measures identified in the NUMP are experiencing challenges in securing continuous funding from national and local government agencies, due both to more pressing issues (e.g., COVID) and a prioritization of heavy infrastructure projects (e.g., rail, roads) over other programs and policies (e.g., reallocation of road lanes for biking and walking). This is reflected in the budget for road-transportation for 2022, of which only 10% has been allocated to active transportation. However, an increase in the transport budget relative to previous years has been made possible by an active civil society movement.

## Political commitment needs to be secured across electoral cycles

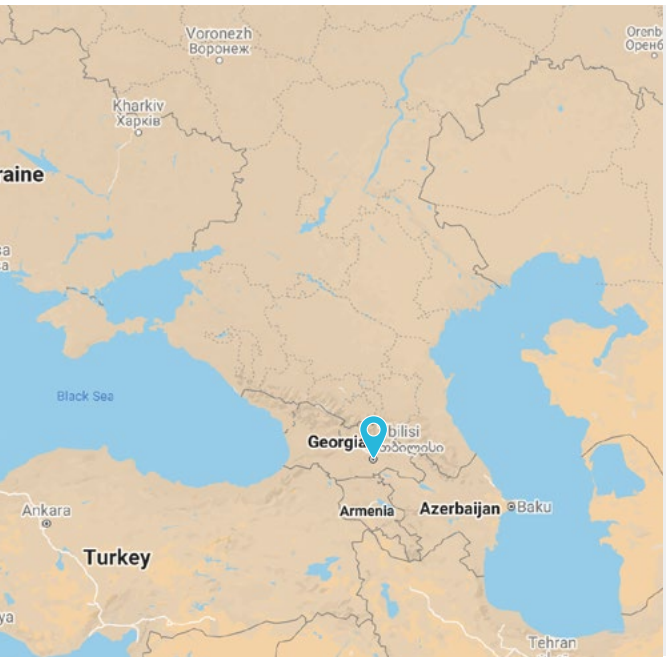
Political commitment is expected to face difficulties with the upcoming national and local elections, potentially leading to the loss of institutional knowledge in partner agencies (e.g., several key staff and offices in the Department of Transport will depart with the existing administration). This potential barrier is currently being addressed through engagement and communication with several transport agencies (e.g., NEDA).

9 https://www.worldbank.org/en/news/press-release/2021/06/10/philippines-mandanas-ruling-provides-opportunities-for-improving-service-delivery-through-enhanced-decentralization

# Tbilisi, Georgia

Partner city

Status of the project: **ongoing technical assistance**




## Basic Information

Urban area: **726 km²**

Population: **1,108,717** | Growth rate: **1.33%**

GDP per capita: **USD 5,422**

Modal Share:

- **Public transport: 49%**
- **Walking: 28%**
- **Private cars: 20%**
- **Taxis: 2%**

National GHG emissions per capita: **4.61 ($tCO_2eq$)**

*Region capital city*

## Context

Tbilisi is the largest city and capital of Republic of Georgia, located in the South Caucasus, in East Georgia along the bank of River Mtkvari. Due to its strategic location between Europe and Asia and its proximity to the Silk Road, the city serves as an important trade route between neighbouring countries thereby significantly experiencing high traffic levels especially through the Tbilisi Metropolitan Area. The population census indicates that around 1,108,717 inhabitants currently reside in the city which accounts for approximately 30% of Georgia's total population (Tbilisi Sustainable Urban Transport Strategy, 2015).

Tbilisi is on the road towards sustainable urban mobility and is working on major areas to promote it. Previously, the city was heavily dependent on private vehicle ownership resulting in major traffic congestions and environmental challenges such as air and noise pollution. However, from 2010s onwards, the city has invested extensively in green transport network in line with Tbilisi Sustainable Urban Transport Strategy. Today, Tbilisi counts with a 27.6 km long soviet-era metro network – servicing an average of 450,000 passenger trips a day and accounting for approximately 13% of total trips[1]– operating as the backbone of the public transport system. The metro is complemented by an expanding BRT system and extensive municipal and mini bus services with a ridership of more than 350,000 daily passengers, a recently introduced bicycle road network.

The city, however, still faces major mobility-related challenges, of which three of the most pressing relate to a lack of infrastructural and fare integration of the diverse public transport services, a persistent predominance of private motorized transport and a very low modal share of active modes, especially cycling. Tbilisi joined the MobiliseYourCity Partnership in 2019 and is now part of a new project aiming at supporting city administrations in the South Caucasus to design, implement and further develop their urban transport systems in the frame of a participatory, sustainable, and integrated urban development.

Georgia's capital is cooperating with various implementing partners of MobiliseYourCity to develop, among others, a Sustainable Urban Mobility Plan (SUMP), improve the existing BRT system in the city center, promote active transport, strengthen the capacities of the local government and develop a cable-car service.

1 Tbilisi Metro Upgrade and Refurbishment Plan | Cities Development Initiative For Asia (cdia.asia)

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD for MobiliseYourCity Asia

**Funding amount:** EUR 406,000

**Implemented by:** AFD in collaboration with ADB and GIZ

**Local counterpart:** Municipality of Tbilisi

**Finance leverage:** EUR 400,000

**Supported Activities:**

- By Asian Development Bank (ADB)
  - Infrastructure development and financing of the SUMP
- By Agence Française de Développement (AFD)
  - Development of the SUMP
  - Improvement of existing BRT-light in the city center
  - Follow-up on initiatives related to active mobiity
  - Improvement of the bus network
  - Development of cable-car system

# Status of implementation

**Project start:** Feb 2019

**Expected project completion:** March 2022

**Next expected outputs**

- Sustainable Urban Mobility Plan

# Highlights

## Implementing organizations working together increases the likelihood of successful implementation

MobiliseYourCity implementing partners have teamed-up in several countries to support SUMPs not only during their development, but also throughout their implementation phase. This is especially the case of MobiliseYourcity Asia, where AFD and ADB are working together in several cities throughout the continent. Tbilisi is a clear example of this beneficial relationship, where the city can reap the benefits of working with three different implementing organizations.

# India

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Population: **1 352 642 280 (2018)** | Growth rate: **1.1%**

Percent of urban population: **34% (2018)**

Urban population growth rate: **2.3% (2018)**

GDP per capita: **USD 9,027**

Percentage of the population living below the national poverty line: **21.9% (2011)**

Nationally Determined Contribution (NDC): **Unquantified transport related NDC**

National GHG emissions per capita: **1.728 ($tCO_2eq$)**

## Context

Home to more than one out of every six inhabitants of the planet, India has the size and weight of a continent. Every city has its own transport system, and their level of development is heterogeneous. The steady economic growth in cities is counterbalanced by the insufficient planning of urban development and the subsequent mobility issues. Private modes of transport are growing rapidly at the expense of greener public and non-motorised transport, which are suffering from lack of investment in infrastructure. The consequences are road congestion, lack of parking space, deteriorating air quality in cities and increased number of traffic accidents.

A specific MobiliseYourCity programme for India aims at (1) supporting three pilot cities, Nagpur, Kochi and Ahmedabad in their efforts to reduce their greenhouse gases (GHG) emissions related to urban transport by implementing sustainable urban mobility plans at local level and at (2) helping India at national level to improve their sustainable transport policy. The programme is implemented with the support of the Ministry of Housing and Urban Affairs and the Government of India at the national level, and the support of the pilot cities through their respective municipal corporations.

At the national level, the foremost tasks include linking urban transport policies to GHG emission reduction and developing a MRV structure to measure and report impact, in order to enable access to climate finance. The envisaged strategy and its operational documentation tools will contribute in achieving the Nationally Determined Contributions (NDCs) outlined by the Government of India under the Paris Agreement, which ambitions "to reduce the emission intensity of its GDP by 33%-35% in 2030 compared to 2005 level". The strategy, known as "Climate Change Mitigation Strategy for Urban Transport (CCMSUT) in India and definition and preparation of an MRV system" is prepared with support of French Development Agency (AFD) and Urban Mass Transit Company Ltd. (PIU of MobiliseYourCity India Programme).

# Support from the Partnership

**Technical Assistance:** Elaboration of a climate change mitigation strategy for urban transport

**Funded by:** EU Asia Investment Facility (AIF)

**Funding amount:** EUR 490,000

**Implemented by:** AFD through the MobiliseYourCity India Project

**Local counterpart:** Ministry of Housing and Urban Affairs (MoHUA)

**Main purpose of the technical assistance:**

Support India at the national level to improve their sustainable transport policy (policy-based strategy), notably by elaborating a Climate Change Mitigation Strategy (CCMS) that could be registered under the United Nations Framework Convention on Climate Change (UNFCCC).

The improved sustainable transport policy shall include an updated vision for urban transport and the identification strategic measures for its implementation, such as institutional development, financing, capacity building among others.

**Supported activities:**

- At national level, MobiliseYourCity is assisting the Government of India (GoI), through the Ministry of Housing and Urban Affairs, in improving their sustainable urban transport policy.
- Linking urban transport policies to GHG emissions reduction as part of the climate change mitigation agenda.
- At local level, MobiliseYourCity is providing support to three pilot cities - Nagpur, Kochi and Ahmedabad - in their efforts to reduce GHG emissions in the urban transport sector by elaborating and implementing SUMPs.

# Status of implementation

**Project start:** 2018 Q3

**Expected project completion:** 2022 Q4

**Completed outputs:**

- First Project Steering committee meeting
- Climate Change Mitigation Strategy
- MRV system Inception
- 9 capacity building sessions conducted at the national level
- Improvement of toolkit to develop Comprehensive Mobility Plans (CMP)

# Highlights

## Improvement of India's toolkit to develop Comprehensive Mobility Plans (CMP)

Comprehensive Mobility Plans are India's strategic planning framework for local governments. They share similar characteristics to Sustainable Urban Mobility Plans, as their main purposes are to develop a long-term vision and goals for a city's urban mobility system, design a plan with urban mobility and land use measures and determination of the necessary steps for its implementation.

India's national government has a toolkit in place to guide cities in the development of CMPs. The toolkit, however, was outdated. With support from MobiliseYourCity, it is being updated and improved along the following lines:

- A self-assessment tool shall provide additional support to cities to identify the current status and preparatory steps needed before developing or improving a CMP.
- Climate change shall gain a more prominent role by acting, for instance, as guiding principle in the prioritization of measures and recommendations.
- Comprehensive Mobility Plans shall be incorporated as statutory documents in Master Plans.

## Focus on public transport system resilience, and non-motorised alternatives, as pandemic severely impacts profitability

Transportation is a fast-growing sector linked with infrastructure development, adoption of new technologies and innovative funding mechanisms. However, the Covid-19 pandemic has strongly reduced revenue and brought new operational and management challenges. Major issues affect collective transport in particular and are related to the decrease in attendance, volatile demand, additional costs of security and disinfection measures, or availability of staff.

Over the past year, knowledge and guidelines have been shared via webinars on how to approach the financial and operational challenges faced by public transport systems, for crisis management, but also in perspective of the post-covid recovery. Electric buses might be part of the response strategy, as they have lower operation costs and higher reliable, on top of the low emissions of GHG and air pollutants.

The stakeholders involved in MobiliseYourCity India have contributed significantly to knowledge development and sharing, and have held webinars and published guidelines on smart-mobility, non-motorised transport modes, the link between air quality and urban planning, tactical urbanism, multimodal integration, and many other topics. These contents are available online on the MobiliseYourCity knowledge platform.

# Ahmedabad, India

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 1,866 $km^2$

Population: 7,800,000 | Growth rate: 2.54%

GDP per capita: USD 2,771

Modal Share:

(Source: Metro DPR)

- Formal public transport: 11.4%
- Informal public transport: 6.1%
- Walking: 37.2%
- Cycling: 9.1%
- Private cars: 3.9%
- Private motorbikes or 2-wheelers: 25.9%
- Other: 6.3%

National GHG emissions per capita: 2.41 ($tCO_2eq$)

Exposure to climate change: MEDIUM

*Region capital city*

## Context

Ahmedabad is one of the oldest and densely populated cities in Gujarat and being a hub to industries, including manufacturing, services, textiles etc. is further experiencing rapid growth in its region. The Greater Ahmedabad (GA) region is expected to grow from 8.1 million in 2011 to about 12.5 million in 2031. Major industrial developments in the city are being planned in areas like Viramgam, Changodar, Bechraji, as well as Special Investment Regions (SIRs) in western and south west part of the Greater Ahmedabad area. To strengthen the growth in the city, another major employment node, called GIFT city is being planned between Ahmedabad and Gandhinagar as a major financial centre. While some industrial investments are also being envisaged in Kadi, Kalol, and Mehmedabad, Sanand, Dehgam, Kheda and Bavla are being developed as residential towns.[1]

All these planned developments are going to add another 1.75 million trips in the study area by 2031, a 15%-fold increase from the current levels. Today, about 21% of the population is covered by the public transport system in Ahmedabad, whereby the mode share for Public Transport is about 11%with about 0.9 million passengers boarding on AMTS (Ahmedabad Municipal Transport Service) buses and 0.13 million on BRTS on a daily basis. Ahmedabad has a compact city structure having poly centric nodes & mixed land use throughout the city, along major roads. Trip patterns are dispersed as the average trip lengths (5.5 km) are lower than comparable sized cities in India.

1 Integrated Mobility Plan for Greater Ahmedabad Region, Vol. 1

Until 2007, Urban Transport was a State function, and had systematically been taken care of in the city of Ahmedabad, especially in the old heritage city. Ahmedabad Municipal Transport Services (AMTS) consists of 201 routes covering 549 kms of road. AMTS has a coverage area spread over 88% of developed AMC area. With reference to the AMTS data from 2012, it caters to 11% of trips within the city i.e. 0.9 million passengers per day. The first closed system BRT in India has been deployed in Ahmedabad in 2009 and is operated by Ahmedabad Janmarg Limited (AJL), a special purpose vehicle (SPV) formulated by Ahmedabad Municipal Corporation, Ahmedabad Urban Development Authority and Government of Gujarat. The BRT system operates on 13 routes with a network length of 82 km and a daily ridership of 130,000 passengers daily with peak headways of 2.5 to 3 minutes.

Ahmedabad Municipal Corporation, the local counterpart, has the mandate and responsibility to finance bus transport infrastructure, whereby it can possibly borrow from international finance sources too. The performance of bus services is monitored and evaluated periodically by the Municipal Corporation.

The local authority is willing to strengthen integrated land-use and transport planning, aiming at addressing the lack of land for public spaces, public transport utility or depots and the absence of walking and cycling infrastructure. Other important challenges are the promotion of fare integration of public transport, the last mile connectivity, the reduction of the travel distance and time and the adoption of on-street design, management, and integration in Local Area Plans.

AFD, through the MobiliseYourCity India Program, is supporting Ahmedabad in the development of a Sustainable Urban Mobility Plan and the establishment of an Urban Mobility Observatory. Technical assistance will contribute to institutional strengthening by building the capacity of urban local bodies on mobility issues and sustainable urban development.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP) and establishment of Urban Mobility Observatory

**Funded by:** European Union through the EU Asia Investment Facility (AIF)

**Funding amount:** EUR 925,000

**Implemented by:** AFD through the MobiliseYourCity India Project and supported by UMTC as Project Implementation Unit (until the end of 2021)

**Local counterpart:** Ahmedabad Municipal Corporation

**Supported Activities:**

1. Preparation of SUMP
2. Creation of mobility observatory
3. Preparation of “Handbook for Physical Planning of Transit Interchanges”
4. Capacity Building activities for stakeholders in the city

# Status of implementation

**Project start:** October 2018

**Expected project completion:** 2022 Q4

**Completed outputs:**

- MoU signed, MobiliseDays conducted (Feb. 2019), inception phase of the SUMP concluded and inception report delivered (Dec. 2021)
- In-person trainings and capacity building workshops - Oct., Dec. 2019, Feb. 2020, and online webinars were conducted during the period of Jun. 2020 – Jan. 2021
- Publishing of the of General guidelines and Concept Plan for Transit Interchanges in Ahmedabad
- Meetings were held with - Local Steering committee (Oct. 2019, Dec. 2019, Jan 2021); AMC (4/7/2021); GUDA (5/1/2021); AUDA (6/2/2021); GMC (8/3/2021) to discuss the SUMP project, objectives and study area; Nodal officer of the SUMP (8/31/2021); SUMP Task Force (Dec. 2021, Oct. 2021).

**Next expected outputs:**

1. SUMP:
   - Diagnosis phase: January – April 2022;
   - Vision and Goal Setting, Construction of Scenarios, Measures prioritization: April – September 2022;
   - Action Plan phase: August – December 2022;
   - Participatory process all along 2022;
2. Mobility Observatory in Nagpur, Kochi and Ahmedabad, and MRV system:
   - Review and confirmation of study's spatial perimeter in the 3 cities and definition of indicators – January 2022
   - Emissions estimation methodology and collection of baseline data in the 3 cities – March-April 2022
   - Data management and development of digital tools (including workshop) – March-June 2022
   - Trainings on data processing and storage – July 2022
   - Launch of the tool and tests – September 2022

# Core impact indicators baselines

| Indicator | Baseline – N/A |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 2273.7 Gg $CO_2$eq [2]<br>As per 2015 study |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 1.8 t $CO_2$eq / capita[3]<br>As per the 2015 study |
| **Access to public transport**<br>Proportion of the population living 500 meters or less of a public transport stop | 21%<br>(IMP 2031) |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 33 µg/m³ of PM2.5[4]<br>As on Date 13-02-2021 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 5 fatalities<br>/ 100,000 hab<br>(2019) |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | N/A |

2 http://wgbis.ces.iisc.ernet.in/energy/paper/GHG_footprint/RSER_bharath2015.pdf

3 http://wgbis.ces.iisc.ernet.in/energy/paper/GHG_footprint/RSER_bharath2015.pdf

4 https://aqicn.org/station/

# Highlights

## New guidelines for improving public transit interchanges were completed

In 2021, the General guidelines and Concept Plan for Transit Interchanges in Ahmedabad was submitted as a key component of the technical assistance provided by the AFD under the MobiliseYourCity Partnership to the city. The aim of the document is to provide design guidelines and principles for the improvement of public transit interchanges, with a special focus on BRT stations in the city of Ahmedabad.

The document addresses the results of a previous analysis of the current state of several stations and their surrounding spaces, which shed light on the following shortcomings:

- There is a lack of open space, and space is not available for several activities
- BRT stations are poorly connected to the neighbourhoods they serve
- There is very little vegetation providing shading to pedestrians
- There is little pedestrian infrastructure, and the major axes are difficult to cross
- Transport modes stand in a competing, instead of a complementary, relationship to each other
- Infrastructure enabling the shift between modes is non-existent

The guidelines provide comprehensive measures and design principles to improve intermodality, safety, comfort and quality of the public transport infrastructure, such as:

- Improving the visibility of the stations through clear signage
- Implementing continuous, direct, and all-accessible pedestrian routes to and from the BRT stations within a radius of 500 meters
- Improving waiting areas with shelter, shading, and the necessary furniture
- Improving the design of BRT stations to increase their accessibility, attractiveness and visibility
- Ensuring consistency in materials and colours used throughout all stations
- Introducing entry ramps and elevators to facilitate access to all groups
- Improving passenger information facilities to facilitate public transport journeys through improved signage

The full document can be accessed in the MobiliseYourCity Knowledge Platform using this link.

## The Covid-19 pandemic continues to disrupt implementation

The start of the SUMP was delayed due to the Covid crisis. As a result, the SUMP will be completed by the end of 2022 instead of end of 2021.

The inception phase enabled the project partners to adapt the proposed methodology for the SUMP process to this exceptional health context. The kick-off meeting was held remotely because of the health crisis that did not allow the French partners to travel to India. The inception phase of the SUMP process was completed by the consortium and the inception report was delivered in December 2021

The work on the Mobility Observatory has been delayed in a similar manner and the project is currently in the process of setting up the basis.

# Kochi, India

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 632 km$^2$

Population: 2,100,000 (2011) | Growth rate: 1%

Coastal City

GDP per capita: USD 2,800 (2017)

GHG emissions per capita: 1,7 tons (India, 2014)

Modal share:

- Motorcycle: 26%
- Cars: 10%
- Public bus: 42%
- Cycling: 3%
- Walking: 12%
- Other motorized: 7%

National GHG emissions per capita: 2.41 ($tCO_2eq$)

## Context

Kochi, one of the most important cities in South India is also known as the commercial capital of Kerala. Its influence area spreads much wider than the municipal corporation area of 95 km² and its 650,000 inhabitants. The mobility demand in the city is exploding and as per the latest estimates, the metropolitan region accounts for almost two million passenger trips per day (CMP, 2017).

AFD has supported the city of Kochi in the construction of a light metro and the restructuration of its urban mobility. An innovation-driven project that greatly contributes to transforming Kochi into a Smart City.

Kochi has initiated various successful initiatives for the multimodal integration of the first phase of the metro in development. The city has introduced an integrated smart card, has an agreement with rickshaw associations, and integrated metro stations with walking and cycling infrastructure.

The city has two railway stations, namely Ernakulum North and Ernakulum South, with an estimated daily passenger volume of 65,000. The two stations are linked through a 3.8 km corridor with major activity centers, including Ambedakar Stadium, Lissie Hospital, KSRTC Bus terminal & depot. However, the connectivity is poor, and dominant modes of transport are walking and auto-rickshaw (intermediate public transport). And despite continuous efforts, the urban local authority has not been able to improve the connectivity between the two stations because of lack of a suitable design and clarity on the optimal movement patterns.

In the recent years, there has been a renewed interest on the need to improve mobility along the corridor. The city plans its development as a green corridor, improving connectivity as well as aesthetics, cleanliness, and security, thereby

raising land value all along. The intent is also to facilitate multi-modal integration by improving the accessibility of metro stations with the identified activity centers. The specific objective of the project is to promote mobility focusing on pedestrians and non-motorized modes to create a more walkable, safe, environment friendly and humane city.

Several challenges remain to be tackled: lack of appropriation of the Comprehensive Mobility Plan (CMP) by the involved stakeholders, the lack of consideration for climate impact in the CMP, disappointing metro ridership and revenues (probably caused by inappropriate fares and competition with city buses), and lack of data availability on urban mobility.

## Support from the Partnership

**Technical Assistance:** Improve existing city mobility plan and support prefeasibility study for priority pilot project

**Funded by:** EU Asia Investment Facility (AIF)

**Funding amount:** Approx. EUR 700,000

**Implemented by:** AFD through the MobiliseYourCity India Project, supported by WRI for project management and coordination

**Local counterpart:** City of Kochi

**Supported Activities:**

1. Elaboration of a toolkit for the preparation of sustainable and appropriated Comprehensive Mobility Plans (CMPs), and definition of monitoring indicators;
2. Capacity-building for Municipal Corporations and Unified Metropolitan Transport Authorities to (i) implement the toolkit in their cities, (ii) elaborate strategies for low carbon transport with the city stakeholders, (iii) ensure monitoring of the implementation of those strategies through data collection, and (iv) transfer the data at the national level;
3. Preparation of CMP improvements with city stakeholders: bus route rationalization study in Kochi;
4. Preparation of a prefeasibility for a priority pilot project: North South Green Mobility corridor in Kochi;
5. Creation of a dedicated unit within Urban Local Bodies to collect data and monitor the progress of CMP implementation as a “mobility observatory.”

## Status of implementation

**Project start:** 2018 Q4

**Expected project completion:** 2022 Q4

**Completed outputs:**

- Mobilise Days
- Launch of the Bus Route rationalization study
- Mobility improvement plan of the north-south rail corridor
- 8 capacity building sessions

**Next expected outputs:**

- Establishment of urban mobility observatory
- Implementation of Green Mobility Corridor

# Highlights

## How Kochi aims to transform the walking experience of more than 10,000 users along the Green Mobility Corridor

As the economic capital of Kerala state in India, the metropolitan agglomeration of Kochi is home to approximately 2.2 million urban dwellers out of which 640,000 inhabitants are located in the core city. As mobility demand continues to rise, the city plans to restructure its urban mobility with support from AFD and the European Union. In addition to the construction of a light metro, Kochi is also tackling non-motorised modes, which account for 15% of all trips. The preparation of a Mobility Improvement Plan along the North-South Railway Station corridor also referred to as the Green Mobility corridor, is one of the major outcomes of this endeavour.

### Moving along an active railway - an uncomfortable and dangerous route

The corridor that was considered for mobility improvement is the shortest connection (2.5 km length) between the Ernakulam North and Ernakulam South railway stations. No continuous road exists along the corridor and the area is dominated by difficult accessibility, uneven paths and lack of lighting at night. Despite these conditions, the four mobility surveys that were conducted in February 2020 as part of the diagnosis phase of the study indicated that almost 15,000 people travel along the corridor every day, including:

- 10,000 pedestrians that either walk along and on the tracks due to the difficult walking conditions (60%) or cross the tracks (40%)
- 3,000 autorickshaw users that use complex and congested routes parallel to the corridor, transporting 8,000 people
- 400 cyclists that use the parts of the corridor that are accessible to them

The diagnosis of the current situation along the corridor indicated the need to improve the connectivity between the railway stations as well as with the city centre and the surrounding areas as part of the inclusion of the area into the urban space of Kochi. The currently unsafe and unattractive conditions further accentuated the need for improved urban management.

### Ensuring safe and comfortable movement along the railway - design and planning principles of the Green Mobility corridor

Based on the analysis of the current conditions and taking into account the results of surveys with current users of the corridor, the plan for the Green Mobility corridor consists of four main components:

- The development of a green corridor adapted to non-motorised transport (mainly focused on pedestrians and cyclists)
- The development of e-rickshaw services on a separate line to provide a fast and environmentally friendly alternative to the current autorickshaws
- Development of hubs and connections to the city centre at core intersections like the KSRTC Bus Terminal to foster intermodal connections and create public spaces
- Development of social and commercial activities to increase the attractiveness of the corridor

The design principles for the proposed project mainly focused on increasing the amenity and accessibility of the area for non-motorised transport modes through the levelling of the ground and the development of pathways of 3 - 4.5 m that allow for a safe passage of cyclists and passengers in the existing right of way. As part of the aim to increase the security of users, the implementation of fences and hedges to create separation to the railway tracks was included in the plan. An illumination concept will further ensure safe and attractive use during the night and can also support the beautification of the corridor. Efforts to integrate existing trees into the new design are planned to further enhance the attractiveness and comfort of walking and cycling on the route.

## On the walkway towards implementation

In this preliminary stage of the project, the implementation costs were estimated at 250 million INR, approximately 3.31 million dollars, excluding land acquisition. The estimated user frequency of the corridor and the associated benefits in terms of emission reduction and increase in social and economic activities include:

- Increase of pedestrians and cyclists by 50% (including transfer from autorickshaws, motorcycles and car users)
- Emission reduction potential of 84t $CO_2$/year based on a transfer of 2,400 vehicle-km/day to green modes on the corridor
- Considerable improvements in safety (prevent people from walking on the railway tracks)
- Attractive public space for the 30,000 people who live, work or study around the corridor

The Mobility Improvement study suggests that the project could be implemented in the short term, and first steps have already been taken by the municipality in this regard. The project was reviewed and updated by the technical department of the Kochi Municipal Corporation and a preliminary assessment of the land ownership was made to elaborate the feasibility. Even though the Covid-19 pandemic and change of municipal government delayed the progress of the project, the project report has been presented and approved by the Municipal Council to begin the Detailed Project Report process for further implementation.

# Nagpur, India

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 217 km$^2$

Population: 2,893,000 | Growth rate: 1.5%

*Region capital city*

GDP per capita: USD 3,000

Modal Share

- Formal public transport: 9.8%[1]
- Informal public transport: 26% (autorickshaw, minibus, school bus, chartered bus etc.)
- Walking: 9.5%
- Cycling: 6%
- Private motorbikes or 2-wheelers: 42.6%
- Private cars: 5.7%

National GHG emissions per capita: 2.41 ($tCO_2eq$)

Exposure to climate change: HIGH

## Context

Nagpur is known as the Orange city of India, the third largest city in the state of Maharashtra and second capital of the state. Nagpur lies precisely at the centre of the country with Zero Mile Stone indicating the geographical centre of India. It is a major commercial and political centre of the Vidarbha region of Maharashtra. With nearly 3 million people, Nagpur accounts for 6.5% of the total urban population of the state. The total population including the surrounding towns of Kamptee, Kalmeshwar, and Hingna was 3.6 million in 20[2].

Nagpur has been the main centre of commerce in the state and is an important trading location. The city is also home to various food manufacturing units. The city is undertaking the Multi-Model International Passenger and Cargo Hub Airport at Nagpur' (MIHAN) project, which is the biggest economic development project currently underway in India in terms of investments.

Nagpur is one amongst the Indian cities having a Metro Rail System. Majority of commuters currently commute by buses as the metro project is still undergoing. Phase I of Nagpur metro was sanctioned in 2015 and its construction began in December 2020. Nagpur metro started commercial operations at 16 of its stations, and also received approval for Phase 2. Nagpur metro has undertaken initiatives to integrate the metro system with other modes such as station and area design for physical integration and a digital app and card for fare integration.

1 Nagpur Metro Phase 2 DPR

2 https://www.macrotrends.net/cities/21347/nagpur/population

Apart from the metro, the city bus service is a crucial mode of transport run by Nagpur Municipal Corporation (NMC). The bus service provides connectivity within the city and with suburban areas such as Butibori, Katol, Kalamna etc. NMC recently procured electric buses to run under the "Tejaswini" scheme, a bus service exclusively reserved for women. The Smart City Corporation of Nagpur (Nagpur Smart and Sustainable City Development Corporation Ltd) is also working to improve transport conditions in the city with various proposals such as PBS, Smart Parking, MLCPs etc. and is working with AFD on the preparation of a transition plan to electric buses.

A proposal was also sent to Maharashtra Government for establishing a Unified Metropolitan Transport Authority (UMTA) in Nagpur. The proposal in under consideration.

As other municipal corporations in India, Nagpur Municipal Corporation , has the mandate and responsibility to finance bus transport infrastructure, whereby it can possibly borrow from international finance sources too. The performance of bus services is monitored and evaluated periodically by municipal corporations.

Whereas the ongoing development of a new phase of the metro will provide a new leap in public transport to counterbalance the negative impact of the increase in private vehicle traffic and provide more sustainable mobility solutions for the future, the city still faces significant challenges, such as the financial sustainability of the public transport system and its very low walkability due to the lack of pedestrian infrastructure. Beyond investment and technology, a transformation of mindset and system is required to move beyond the current reliance on individual mobility, for which increased public awareness on the benefits of a more sustainable mobility system will be critical.

Considering that the last comprehensive mobility plan (CMP) was prepared in 2013 and since CMPs are revised in 10 years, a new version may be taken up in the upcoming years. Further mobility needs, patterns and challenges have evolved with the introduction of the metro in the city and warrant an updated planning framework. In addition, the old CMP did not focus on e-mobility aspects which have gained traction in last few years.

AFD is supporting the Nagpur Municipal Corporation in the improvement of the existing CMP, the development of an e-bus transition plan and the creation of a mobility observatory.

## Support from the Partnership

**Technical Assistance:** Various activities

**Funded by:** European Union though the EU Asia Investment facility

**Funding amount:** EUR 350,000

**Implemented by:** AFD through the MobiliseYourCity India Programme

**Local counterpart:** Nagpur Municipal Corporation via Nagpur Smart and Sustainable City Development Corporation Ltd.

**Supported Activities:**

1. Update of the existing Comprehensive Mobility Plan (CMP)
2. Development of Transition Plan of Municipal buses to Electric Buses
3. Creation of a mobility observatory

# Status of implementation

**Project start:** October 2018

**Expected project completion:** December 2022

**Completed outputs:**

- MoU signed - August 2018
- Local Steering Committee meetings were held during November 2019, December 2019, December 2020 and Technical task force committee settled in March 2019
- 8 Trainings and capacity building workshops - July 2019, December 2019 and February 2020
- Online webinars were conducted during the period of June 2020 – Jan 2021
- Elaboration of a Transition Plan for Municipal Bus Network In Nagpur – Final report "Pre-feasibility study for electric buses deployment" November 2021
- Elaboration of a Transition Plan for Municipal Bus Network In Nagpur – Final report "Transition Plan for electric bus fleet upgrade" November 2021

**Next expected outputs:**

- CMP improvement
- Mobility Observatory

# Core impact indicators baselines

| Indicator | Baseline – N /A |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 507,300 Mt $CO_2$eq[3] |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 197 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 49.2 µg/m³ of PM2.5[4] |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 10 fatalities / 100,000 hab |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | 12%[5] |

3 Working paper 1.5o C Alignment for Indian Cities: Case Study of Nagpur

4 https://www.iqair.com/us/india/maharashtra/nagpur

5 CMP Nagpur 2013

# Highlights

## With the support from AFD, the Nagpur Municipality has developed a transition plan that aims at progressively replacing existing internal combustion buses with e-buses

The transition plan to electric buses builds on Nagpur's Comprehensive Mobility plan, which envisaged a progressive increase of the bus fleet size by almost 90% in 2018 and up to 4.5 times its current size by 2041, for a total of 2,418 buses.

The transition plan not only addresses the electrification requirements of a significant share of the bus fleet, but also includes recommendations on route rationalization for a better integration with the recently introduced metro and adaptations to the contractual framework to guarantee operational and financial viability of the new system.

The pre-feasibility study focused on the electrification impacts and operational requirements of the bus fleet that shall be replaced by 2022, as foreseen in the existing contracts. In total, 237 standard diesel buses shall be replaced with 202 newer vehicles. For this purpose, three scenarios were assessed:

- **Reference scenario**: Replacement with new standard diesel buses
- **Scenario 1:** Replacement with new electric buses of 350 kWh battery capacity
- **Scenario 2:** Replacement with new electric buses of 400 KWh battery capacity

The pre-feasibility study showed that all modernization scenarios required higher OPEX and CAPEX. The e-bus scenarios require significantly higher resources than the reference scenario. This difference is caused by a significantly higher CAPEX of e-buses relative to diesel buses compared to a lower OPEX for the former.

To close this funding and financing gap, both the study and the transition plan recommend three potential solutions:

1. **Increased cost efficiency through improved contractual frameworks:** Such adaptations could include extending the contract duration from 5 to 10 years, providing additional incentives to increase operational efficiency and renegotiating existing contracts or launching new competitive tenders for the new electric buses.
2. **Investment subsidies:** Different sources could be leveraged by the Nagpur Municipality to cover the increasing costs, such as advertisement revenue, land-value taxes, as well as international support in the form of soft loans and grants for capital expenditures from diverse sources, such as the Green Climate Fund or the Clean Technology Fund. The study however did not include any of these sources in its financial analysis, hence their potential remains unclear.
3. **Increased fare box revenue:** Currently, Nagpur's tariff levels are relatively low compared to agglomerations sharing similar characteristics, as the city has given priority to service affordability, by relying on public subsidies to close the ensuing gap. According to the study, the current conditions provide some flexibility to potential fare increases, assuming that these are progressive and their impact on ridership levels remains limited.

The necessary investments to electrify the bus fleet can be justified by non-quantified positive externalities, such as improved health and air quality and reduced GHG emissions. Even with high emission factors stemming from the electricity grid, battery electric buses have the potential to reduce $CO_2$ emissions by 30% compared to diesel buses, and could save approximately 100 $ktCO_2e$ over a period of 15 years.

Nagpur's transition plan and the pre-feasibility study can be accessed in the MobiliseYourCity Knowledge Platform using this link.

# Medan, Indonesia

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 3,151 km$^2$

Population: 4,795,186 | Growth rate: +1.1%

GDP per capita: USD 12,400

Modal Share

- Formal public transport: 1.85%
- Informal public transport: 63.8%
- Private cars: 5.54%
- Private motorbikes or 2-wheelers: 11.7%
- Taxis: 16.11% (by E-Hailing transport services (motorcycle, car - such as Gojek, Grab...):
- Other: 0.2%

National GHG emissions per capita: 3.45 ($tCO_2eq$)

*Region Capital City*

## Context

Located in the northern part of Sumatra Island, Medan is the capital and largest city of the North Sumatra Province and the fourth largest city in Indonesia. Its population is 2.3 million inhabitants, while f its metropolitan area has 4.8 million inhabitants, and it is expected to continue to grow. Medan Metropolitan Area is composed of four Kota (cities) and two Kabupaten (regencies): Kota Medan, Kota Binjai, Kabupaten Deli Serdang and (part of) Kabupaten Karo.

Belawan, the third biggest container port in Indonesia, is located in Medan, as well as Kualanamu International Airport (the fifth busiest airport of the country). The city's economic growth rate of 6.4% is higher than the national average, which makes the Medan metropolitan area an important industrial and economic hub in Indonesia.

The Medan Metropolitan Area is facing a rapid increase of private motorised vehicles use (predominantly motorcycles). In the meantime, road lengths are increasing by only 0.8% a year. The increased number of vehicles causes congestion issues.

Public transport operates on fixed routes in Medan and consists of public passenger cars and small, medium and large buses. The area also benefits from a rail network as an alternative transport mode. It is to be noted that there is no Public Transport Authority in the City of Medan and the Metropolitan Area.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 510,155

**Implemented by:** AFD through MobiliseYourCity Asia

**Local counterpart:** North Sumatra Province (and the representatives of the Medan Metropolitan Area authorities from Kota Medan, Kota Binjai, Kabupaten Deli Serdang and Kabupaten Karo).

**Supported activities:**

- Support of a SUMP process for the Medan Metropolitan Area
- Capacity development activities (after inception phase approval)
- Develop a citizen participation process and a communication plan
- Creation of an observatory on urban mobility data and GHG emissions

# Status of implementation

**Project start:** 2020 Q3

**Expected project completion:** 2022 Q1

**Completed outputs:**

- Inception Phase
- Diagnosis
- Construction of scenarios and formulation of priority measures
- Action plan that includes indicators and budget and financing measures

**Next expected outputs**

- Final SUMP document
- Establishment of an Observatory on urban mobility data and GHG emissions

# Projected impacts

| Indicator | Impact 2035 (SUMP vs BAU) | Baseline - 2020 | Projected 2035 BAU | Projected 2035 SUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -0618 t $CO_2$eq | 2225 t $CO_2$eq | 3196 t $CO_2$eq | 2578 t $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | -124 kg $CO_2$eq / capita | 549 kg $CO_2$eq / capita | 641 kg $CO_2$eq / capita | 517 kg $CO_2$eq / capita |
| **Access**<br>Increase of the proportion of the population living 750 meters or less of a mass transit stop | +7,3% | 3,8% | 3,8%[1] | 11,1% |
| **[2]Air pollution**<br>Decrease in mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | N/A | N/A | N/A | N/A |
| **Modal share**<br>Increase of the modal shares of trips by public transport, walking and cycling | Public Transport[3]: 13.7%<br>NMT[4]: 15% of total trips<br>**TOTAL: 13.7%** | Public Transport: 9.6%<br>NMT: 15% of total trips<br>**TOTAL: 24.6%** | Public Transport: 9.6%<br>NMT: 15% of total trips<br>**TOTAL: 24.6%** | Public Transport: 23.3%<br>NMT: 15% of total trips<br>**TOTAL: 38.3%** |
| **Road safety**<br>Decrease of traffic fatalities in the urban area, per 100.000 inhabitants | -9.0 fatalities/100,000 hab | 10.4 fatalities/100,000 hab | 13.9 fatalities/100,000 hab | 4.9 fatalities/100,000 hab (Target) |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | -15,5% | 13,0% | 20,5% | 5,0% (Target) |

# Highlights

## Interest in mass transit investments predominates over non-motorized transportation

In the context of the Medan area, most stakeholders see mass transit development as a leverage to improve urban mobility. This is explained by Medan being a secondary city seeking development and competing with other municipalities in Indonesia to receive support (technical and financial) from the central government for mass transit investments. Mass transit systems are capital intensive, they play a structuring role of the SUMP, and therefore they obtain the greatest interest from stakeholders.

This resulted in softer measures, such as the development of active mobility, being relegated as secondary after mass transit and other more monetizable projects. Different strategies were adopted by the consultant to highlight the importance of active mobility development: the improvement of active mobility facilities is needed by all communities; and large transit projects can be leveraged as triggers to the improvement of accessibility towards their stations.

1 With assumption of population growth in parallel of organic angkot routes.

2 Absence of data due to Medan current capacity of air quality measurements (lack of monitoring station).

3 Estimated public transport users as forecasted in multi-modal transport model. 99% are estimated in informal public transport systems.

4 Not included in multi-modal transport model.

## The study area should be defined before Component 1: Inception

The SUMP area is a key determinant of the SUMP action plan, and depth of analysis for all aspects of mobility. Indeed, a wide area involving many administrations results in a macro-level analysis leading to guidelines, while a more limited area might result in results with a more defined scope and therefore more practical. The study area can be set early during the ToR preparation so that the adequate budget and timeline for the obtention of practical results can be estimated before the start of the SUMP process.

## Gender and social inclusion issues in mobility were highlighted and should be maintained

During the SUMP preparation, gender challenges in urban mobility for the Medan context were assessed. SUMP forums allowed the representatives of vulnerable communities (women, disabled, elderly, children) to raise their concerns regarding urban mobility, and to share their insights to make it more inclusive. The vulnerable groups expressed their appreciation for their involvement in the consultation process, an unprecedented activity for most of them. Their involvement should be maintained in future mobility planning initiatives of the province and cities/regencies of Mebidangro.

## Stakeholder commitment and expectations of the SUMP must be clarified early

A firm explanation is needed from the implementing organization to the local stakeholders to ensure that all expectations are aligned on the outcome of the SUMP (level of detail, scope, follow-up, modes, technical depth, macro/micro level, etc.). Moreover, a constant engagement by the donor is needed to secure stakeholder commitment towards the preparation of the SUMP and the implementation of proposed projects. It is important that this commitment is addressed with high-level government officials by the funding partner, to further secure support and assistance from operational government actors during the SUMP elaboration.

## Data availability and uniformity among regions was a significant challenge in the diagnosis phase

The diagnosis phases faced challenges, particularly related to data gaps among the different jurisdictions within the study area. Socio-economic and mobility information is heterogeneous in cities and regencies of the same province. The consultant has led an important consolidation work during the diagnosis component in order to ensure data quality and uniformity, but this effort implied delays. This could be accommodated in the next SUMPs by anticipating the implications of having a wide study area (with several administrations) and/or providing more time to conduct the diagnosis.

## Technical knowledge on sustainable urban mobility shared during the training sessions could be further disseminated to wider audiences, cities and regions

The SUMP process included multiple training sessions to enhance the technical capacity of the Mebidangro agencies in sustainable urban mobility planning. The knowledge products, developed with a bottom-up approach, and corresponding to each of the four phases of the SUMP preparation, can be generalized and used in other SUMPs, e.g. through MobiliseYourCity's Communities of Practice.

## COVID-19 impacted most of the SUMP preparation but forced innovation

COVID-19 restrictions also impacted the feasibility of most workshops and efficiency of discussions with local stakeholders. More time was needed throughout the SUMP components to obtain conclusive insights and reach consensual conclusions with stakeholders.

Despite the COVID challenges, the team successfully adapted to the situation and was able to undertake surveys, stakeholder engagement and workshops by taking advantage of new methodologies including a mobile application for safe surveys, online platforms to discuss and share documents, with live translation (English and Indonesian) and maintain engagement in online discussions. Furthermore, mobility was analysed at a deeper level thanks to cellular data to cope with the reduction of movements during the pandemic. While the COVID-19 pandemic limited essential activities, the mobility planning process benefited from innovative tools.

## The SUMP's data collection was the biggest program of this kind in Indonesia

The program for data collection for the SUMP Mebidangro was the largest ever conducted in Indonesia. It involved more than 100 surveyors for primary data collection – counting and interviews (household surveys, traffic surveys, origin-destination surveys). More than 15,000 households and 45,000 individuals were directly interviewed. The consultant engaged with the national cellular telecommunications provider to gather information on travels before and during the COVID-19 pandemic: trips of more than half of the area population were studied, amounting to approximately 2 million inhabitants. Secondary data collection also occurred by engaging and consulting more than 30 institutions throughout Mebidangro's provincial, city and regency agencies.

Given the COVID-19 pandemic during data collection process – which forced the government to implement mobility restrictions, trip patterns deviated from normal conditions, posing a challenge to modelling and planning transportation for the long term. To reconstitute a "normal" situation and evaluate current trips at levels not impacted by the pandemic restrictions, the consultant engaged with the cellular provider to normalize observed trips. The consultant and the telecommunications provider jointly developed a robust methodology to extract and consolidate movements information, and making the data fit for modelling and forecasting future trips. This methodology can now be used in other programs in and outside Indonesia.

## Metropolitan-scale Monitoring, Reporting and Verification (MRV): set a national benchmark and generalize the method

During the SUMP preparation and following MobiliseYourCity requirements, the consultant prepared a robust Monitoring, Reporting and Verification framework for the local counterpart to be used in future years. Step by step, the requirements were defined for the local context, before the methodology was explained through different workshops and trainings, with a focus on identifying and updating indicators and using the monitoring dashboard. Setting up the MRV framework was well accepted by the stakeholders thanks to several detailed and contextualized workshops conducted. As a national framework for MRV on urban mobility does not exist at national scale in Indonesia, the MRV work of Medan SUMP can open the way to its replication in other Indonesian cities or help define a centralized MRV system at the national level.

# Abbottabad, Pakistan

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 1,967 km²

Population: 981,590 (district scale) | Growth rate: 1.82%

GDP per capita: USD 1,284 (Pakistan, 2019)

## Context

The city of Abbottabad is located 61 km northeast of Rawalpindi, in the Hazara Division of Khyber Pakhtunkhwa province, in the northwest of Pakistan. It is a gateway to the picturesque Kagan valley. It is connected by road with Indus plain and the Kashmir region, and by rail with Peshawar. The city is a district market and trade center and stands out for being a communication route with China and northern parts of Pakistan. The population of Tehsil Abbottabad is 981,590 distributed over an area of 1,967 km². The administration of the city is under District Administrator Abbottabad.

Currently, the major issues related to urban mobility in Abbottabad are:

- High influx of vehicles due to tourism
- High number of commercial vehicles passing through the city, affecting capacity and safety
- Lack of infrastructure such as alternative routes/bypasses, underpasses/flyover, parking areas, intersection improvement, facilities for non-motorized transport
- Lack of road safety and traffic management
- Air pollution from vehicles
- Lack of master plan framework for urbanization and transportation
- Lack of formalised institutional setup for addressing mobility issues

The Local Counterpart, the Khyber Pakhtunkhwa Urban Mobility Authority, has the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban matters.

The SUMP elaboration aims at providing a comprehensive sustainable mobility plan at the urban scale and at proposing a conceptual design for priority projects to identify.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 1,200,000 global budget for SUMPs 3 cities within the Khyber Pakhtunkhwa province

**Implemented by:** AFD and ADB through MobiliseYourCity Asia

**Local counterpart:** Transport Department Government of Khyber Pakhtunkhwa province and the Khyber Pakhtunkhwa Urban Mobility Authority

**Supported activities:**

- Support the SUMP process for the city of Abbottabad
- Conceptual design for priority projects to identify

# Status of implementation

**Project start:** July 2021

**Expected project completion:** September 2022

**Completed outputs:**

- Inception report

**Next expected outputs**

- Urban mobility diagnosis
- Scenario building
- Action plan

# Highlights

## One SUMP process for three cities

As the financing of urban mobility lies within the purview of the provincial government, only one SUMP process is carried on to develop the SUMPs of three cities, Abbottabad, Peshawar and Mingora, located within the province of Khyber Pakhtunkhwa.

The management and supervision of the SUMP is the responsibility the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA), recently created with support from the Asian Development Bank to plan and regulate transportation within the province. The capacities of the transport authority will be strengthened throughout the planning process to facilitate the coordination with the three cities and the management of the elaboration and implementation of the SUMP. Additionally, the staff will be trained to use a tailored software that will allow them to more effectively plan future investments in urban mobility – a prerequisite to ensuring the successful implementation of the SUMP.

The development of the SUMP is being conducted with participation of both the provincial and local authorities, under the leadership of KPUMA. This coordination process has been facilitated through the establishment of three technical SUMP committees for each of the involved cities, Abbottabad, Swat and Peshawar.

The urban mobility diagnosis is currently ongoing. The data collection process and activities will be implemented by three different teams on the ground, one for each city.

# Mingora (Swat District), Pakistan

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Urban area: **5,337 km$^2$ (district scale)**

Population: **2,309,570 (district scale)**

National GHG emissions per capita: **1.99 ($tCO_2eq$)**

## Context

Mingora is the largest city and commercial centre of the Swat district, while Swat's administrative capital is Saidu Sharif. Mingora is located on the Swat River side, north of Saidu Sharif. This district is part of the Malakand division of Khyber Pakhtunkhwa province of Pakistan. It is renowned for its natural beauty and well known as a tourist centre. Mingora is connected by the N-95 and N-45 highways to Peshawar and Islamabad through Mardan. Locally, the administration is run by the Deputy Commissioner. Tehsil Municipal Administration is responsible urban transport and the Regional Transport Authority regulates private vehicles.

Mingora suffers from inadequate road capacity (including infrastructure facilities such as flyovers and underpasses) in view of the high traffic growth rate and rising private vehicle ownership. Road safety is a major issue due to a lack of proper traffic control devices (such as signs, signals, markings) and a little enforcement of regulations by traffic wardens. There is currently no masterplan for transportation and land use available.

The local Counterpart, the Khyber Pakhtunkhwa Urban Mobility Authority has the mandate and responsibility to finance mass public transport infrastructure. It does not have the capacity to borrow from international finance sources. Some systems and procedures are partially in place to monitor, evaluate and report on urban issues.

The Sustainable Urban Mobility Plan (SUMP) elaboration aims at providing a comprehensive sustainable mobility plan at the urban scale and at proposing a conceptual design for priority projects that will be identified in the SUMP.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** French Development Agency (AFD)

**Funding amount:** EUR 1,200,000 (budget includes SUMP for 3 cities in the Khyber Pakhtunkhwa province)

**Implemented by:** AFD and the Asian Development Bank (ADB) through MobiliseYourCity Asia

**Local counterpart:** Transport Department Government of Khyber Pakhtunkhwa province and the Khyber Pathtunkhwa Urban Mobility Authority

**Supported activities:**

- Development of a Sustainable Urban Mobility Plan
- Conceptual design for identified priority projects

# Status of implementation

**Project start:** Q3 2021

**Expected project completion:** Q3 2022

**Completed outputs:**

- Inception report

**Next expected outputs**

- Urban mobility diagnosis
- Scenario building
- Action plan

# Highlights

## Managing one SUMP process for Peshawar, Swat and Abbottabad

Since all three cities belong to the same province i.e., Khyber Pakhtunkhwa, financing of urban mobility lies within the purview of the provincial government. Therefore, one SUMP process shall be developed for three cities located within the provincial government's jurisdiction.

The management and supervision of the SUMP formulation will be the responsibility the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA), an institution recently created with the support of ADB to plan and regulate transportation within the province. The capacities of the transport authority will be strengthened throughout the planning process to facilitate the coordination with the three cities and the management of the elaboration and implementation of the SUMP. Additionally, the staff will be trained to use a tailored software that will allow them to effectively plan future investments in urban mobility – a prerequisite to ensuring the successful implementation of the SUMP.

The development of the SUMP is being conducted with participation of both the provincial and local authorities, under the leadership of KPUMA. This coordination process has been facilitated through the establishment of three technical SUMP committees for each of the involved cities, Abbottabad, Swat and Peshawar.

The urban mobility diagnosis is currently ongoing. The data collection process and activities will be implemented by three different teams on the ground, one for each city.

# Peshawar, Pakistan

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 1,217 km²

Population: 4,269,079 | Growth rate: +3.29%

GDP per capita: USD 1,406 (Pakistan)

Modal Share

- Formal public transport: 15%
- Private cars: 62%
- Private motorbikes or 2-wheelers: 22%
- Freight vehicles: 1%

National GHG emissions per capita: 1.99 ($tCO_2eq$)

## Context

Peshawar is the capital city of Khyber Pakhtunkhwa province. This city is located 160 km west of Pakistan's capital city Islamabad. It has 1,970,042 inhabitants, spread over an area of 157 km². The metropolitan area counts 4,269,079 inhabitants spread over an area of 1,217 km². The city is run by the Peshawar Municipal Corporation.

The city has recently introduced a Bus Rapid Transit (BRT) system, the "Zu Peshawar". It was conceived and built with assistance from the Asian Development Bank (ADB) and the French Development Agency (AFD) and started operating in August 2020. Operated by TransPeshawar, the BRT system includes one main corridor stretching over 28 km from Chamkani in the east, to Hayatabad and Karkhano Market in the west, and is complemented by a 68 km long network of 8 feeder routes, which connects the main corridor system and provides service to other parts of the city.

According to a feasibility study conducted ahead of the implementation of the BRT system, the modal share of cars and motorcycles dominated largely, representing respectively 62% and 22%. Public transport, including Rickshaws only represented 15% of the modal share.

Peshawar lacks a sufficient public service offer, forcing people to rely on private cars which leads to traffic congestion, road safety issues and poor air quality. The city does not have a sufficient road network, infrastructure for non-motorised transport or proper traffic management. The city has also identified a need for better control of land use and urban development.

To overcome these challenges and prepare a comprehensive plan addressing not only transport issues but also improving the quality of life in the city the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA) has decided to develop a Sustainable Urban Mobility Plan (SUMP). The SUMP would also consider local economic development and health issues, among other mobility-related topics.

The SUMP should allow to develop a Transport Management Plan and establish a Road Safety Authority. It will also include measures to improve non-motorized transport. Another area of the SUMP should consist in equipping the city to better monitor traffic and GHG emissions. Finally, it will build capacities in KPUMA for sustainable mobility planning.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 1,200,000 (budget includes SUMP for 3 cities in the Khyber Pakhtunkhwa province)

**Implemented by:** AFD and ADB through MobiliseYourCity Asia

**Local counterpart:** Transport Department Government of Khyber Pakhtunkhwa province and the Khyber Pakhtunkhwa Urban Mobility Authority

**Supported activities:**

- SUMP elaboration for the city of Peshawar
- Conceptual design for identified priority projects (i.e., BRT transit corridor and line extensions, cable car)

# Status of implementation

**Project start:** July 2021

**Expected project completion:** September 2022

**Completed outputs:**

- Inception Phase
- Next expected outputs
- Diagnosis report
- Development of urban mass transit corridors
- Consolidation of the existing public transport network
- Improvement of the road and parking management
- Institutional reform

# Insights from practice: lessons learned from the SUMP process

## Managing one SUMP process for Peshawar, Swat and Abbottabad

Since Peshawar, Swat and Abbottabad belong to the same province i.e., Khyber Pakhtunkhwa, financing of urban mobility lies within the purview of the provincial government. Therefore, one SUMP process shall be developed for three cities located within the provincial government's jurisdiction.

The management and supervision of the SUMP will be the responsibility the Khyber Pakhtunkhwa Urban Mobility Authority (KPUMA), recently created with support from ADB to plan and regulate transportation within the province. The capacities of the transport authority will be strengthened throughout the planning process to facilitate the coordination with the three cities and the management of the elaboration and implementation of the SUMP. Additionally, the staff will be trained to use a tailored software that will allow them to more effectively plan future investments in urban mobility – a prerequisite to ensuring the successful implementation of the SUMP.

The development of the SUMP is being conducted with participation of both the provincial and local authorities, under the leadership of KPUMA. This coordination process has been facilitated through the establishment of three technical SUMP committees for each of the involved cities, Abbottabad, Swat and Peshawar.

The urban mobility diagnosis is currently ongoing. The data collection process and activities will be implemented by three different teams on the ground, one for each city.

# Kurunegala, Sri Lanka

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 11 km$^2$

Population: 122,172 | Growth rate: 1.4%

GDP per capita: USD 3,853

Modal Share:

- Formal public transport: 25.3%
- Informal private transport: 16.2%
- Walking: 11.8%
- Cycling: 1%
- Private cars: 22.3%
- Private motorbikes or 2-wheelers: 18.7%
- Taxis: 1.3%
- Other: 3.4%

National GHG emissions per capita: 1.67 ($tCO_2eq$)

Exposure to climate change: Low

*Region capital city*

## Context

Kurunegala has 120,000 inhabitants, including 30,000 in the urban core. Despite being a relatively small city for Sri Lanka, it is the capital city of both the North Western Province and the Kurunegala District.

According to the National Physical Plan (NPP) updated by the National Physical Planning Department (NPPD) of the Ministry of Megapolis and Western Development (MMWD) in 2018, Kurunegala urban area could grow to 1,000,000 inhabitants by 2050. This city should meet an annual growth rate of 2.5%, the highest of Sri Lanka. Kurunegala should become one of the main urban centres – even a "metro region" – of the East-West Development Corridor that guides the spatial and economic development at the national scale. Consequently, Kurunegala will face many challenges regarding urban development, employment, and transportation. The city must plan its internal transport as well as connections with the other cities of the corridor and with Colombo, the national Capital City.

The city has a railway station (located in the South East of the urban core) and is located on a rail axis, but it does not play a major role in daily commuting as people usually commute by private motorised vehicles (car, motorbike and tuk-tuk) or by public bus. Currently, the Municipality of Kurunegala (the SUMP local counterpart) does not have the mandate or responsibility to finance mass public transport infrastructure nor the authority to borrow from international finance sources. The running costs of the collective transport system are, however, part of the public authority's budget.

The objective of the project is the elaboration of a SUMP for the city of Kurunegala from the ground up since there is neither an existing public mass transit system nor an existing transport master plan for the city.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 400,000

**Implemented by:** AFD through MobiliseYourCity Asia

**Local counterpart:** Municipality of Kurunegala

**Supported Activities:**

- MobiliseDays (35 participants)
- Diagnosis workshop (32 participants)
- Public Transport focus group
- Scenario analysis workshop

# Status of implementation

**Project start:** Q1 2019

**Expected project completion:** Q4 2021

**Completed outputs:**

- Inception report (September 2019)
- Diagnosis report (March 2020)
- Scenario elaboration and comparison report (1st Draft, May 2020/ Revised Draft, December 2020)

**Next expected outputs**

- Final SUMP report

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost Estimate | Implementation Period |
|---|---|---|
| Introduce a road hierarchy for Kurunegala | 60,000 | 2021-2023 |
| Speed regulation and enforcement | 80,000 | 2021-2023 |
| Parking Mangement | 60,000 | 2021-2023 |
| | 120,000 | 2023-2026 |
| Outer Ring Road | | |
| Develop Green Corridors/Pedestrian/Bicycles | 60,000 | 2021-2023 |
| City Center Calming | 120,000 | 2021-2023 |
| Introduce linked ATM system for city including PT priority at signals | 100,000 | 2021-2023 |
| | 100,000 | 2023-2026 |
| Develope Transit Corridor | to be costed in feasibility sudy (FS) | TBD in FS |
| Provide mini-bus stands at the city centers | to be costed in FS | TBD in FS |
| Provide park-and-ride at the city centers | to be costed in FS | TBD in FS |
| Develop Multimodal hub at rail central station | to be costed in FS | TBD in FS |
| City bus network (Current services improvement) | 80,000 | 2021-2023 |
| City bus network (Public Service Obligation) | 200,000 | 2023-2026 |
| Develop ITS for Public Transport (ticketing, digital mapping) | 60,000 | 2021-2023 |
| | 120,000 | 2023-2026 |
| Develop fare integration within KMC area (for PT, rail and | 200,000 | 2023-2026 |
| School bus parking | 60,000 | 2023-2026 |
| Freight Transport | 120,000 | 2023-2026 |
| Bike and E-rickshaw promotion | 200,000 | 2021-2023 |
| Preparation & promulgation of auto rickshaw regulations | 120,000 | 2021-2023 |
| Institutional support and progressive development of coordinated urban transport arrangements | 440,000 | 2021-2023 |
| Improve pedestrian and vehicular access to the Kurunegala Teaching Hospital | F.S to be costed | F.S to be costed |
| Street design toward inclusion pedestrians and non motorised transport | 120,000 | 2021-2023 |
| Muttetugala overpass | F.S to be costed | F.S to be costed |

# Projected impacts

| Indicator | Impact 2030 (SUMP vs BAU) | Baseline - 2018 | Projected 2030 BAU | Projected 2030 SUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -0.0002 Mt $CO_2$eq | 0.0827 Mt $CO_2$eq | 0.0935 Mt $CO_2$eq | 0.0933 Mt $CO_2$eq |
| **Veh.km of formal public transport** Increase of the availability of public transport | Formal public transport: 7,698 Veh.km | Formal public transport: 51,209 Veh.km | Formal public transport: 66,748 Veh.km | Formal public transport: 74,446 Veh.km |

# Highlights

## Kurunegala's SUMP prioritises measures for their implementation

The implementation of the SUMP has been structured by identifying primary and secondary actions. The former refers to main SUMP projects that will be developed and implemented on their own and on a priority basis. The latter will function to enhance the impact of primary projects and are considered as subordinate to these.

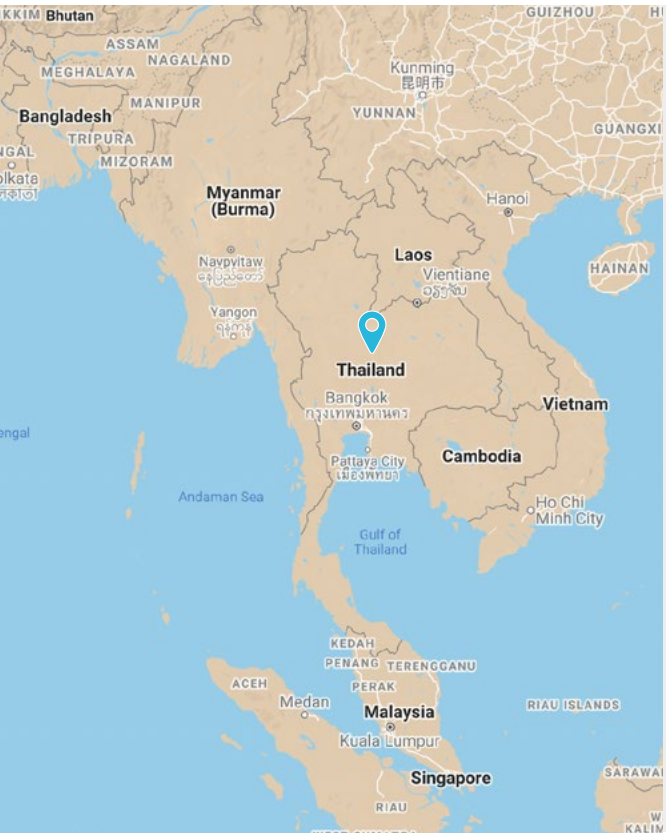
In total, 26 measures were identified in the SUMP, and two development scenarios were proposed that could be implemented separately or collectively, depending on their level of ambition. Considering the project objectives, scenario two was finalized for implementation. It focused on medium-term goals (till the year 2025) regarding public transport development and implementation of governance structures overall shaping the mobility framework for the city of Kurunegala.

The Kurunegala Municipal Council (KMC), Road Development Authority (RDA), and SriLankan Transport Board (SLTB) oversee the implementation of most of these measures. The funding for the different measures is expected to be assumed with support from International Funding Institutions (IFI), and will be complimented by KMC, RDA, and Urban Development Authority (UDA). The financial mechanism for these measures is rather complex as it involves multiple stakeholders for the different measures, and to date remains unclear.

# Thailand

Partner city

Status of the project: ongoing technical assistance




## Basic Information

Population: 66.17 million[1] (2021) | Growth rate: -0.01%[2]

Percentage of urban population: 34.47%[3]

GDP per capita: USD 6,730.31[4] (2020)

Percentage of the population living below the national poverty lines: 6.84%[5] (2020)

Nationally Determined Contribution (NDC):

Reducing GHG emissions by 20%,or 115.6 $MtCO_2$, from projected BAU level by 2030.

Transport will aim to reduce 41 $MtCO_2$ or 35.42% of the total NDC target (MoT).[6]

National GHG emissions per capita: 5.37 $tCO_2eq$ (excluding LULUCF), 3.99 $tCO_2eq$ (including LULUCF)[7]

Proportion of transport related GHG emissions: 25.93% (including LULUCF)[8]

Exposure to climate change: HIGH[9]

## Context

Thailand is located in the heart of Southeast Asia, and it borders with Lao PDR, Myanmar, Cambodia, and Malaysia. Its capital is Bangkok or Krung Thep in Thai. Thailand has the second largest economy in Southeast Asia after Indonesia. The services sector represents 45.75% of jobs in Thailand and contributes to 58.59% of the total GDP, followed by the agriculture sector, which employs 31.62% of the active workforce and contributes to 8% of the GDP. Last is the industry sector, which employs 22.63% of the active workforce and contributes to 33.4% of the GDP (Statista, 2019). Thailand relies heavily on tourism, with nearly 40 million visitors in 2019. This puts Thailand in one of the top 10 most visited countries in 2019. However, many sectors have suffered from the decline in tourism due to the COVID-19 pandemic, which had a major impact on Thailand's economy. Thailand experienced a negative GDP growth in 2020 for the first time since 1998.

1 http://www.ratchakitcha.soc.go.th/DATA/PDF/2565/E/012/T_0010.PDF

2 https://www.nesdc.go.th/ewt_dl_link.php?nid=3507&filename=social

3 http://statbbi.nso.go.th/staticreport/Page/sector/TH/report/sector_01_11206_TH_.xlsx

4 https://www.nesdc.go.th/ewt_dl_link.php?nid=12073&filename=ni_page

5 https://www.nesdc.go.th/ewt_dl_link.php?nid=3518&filename=social

6 https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Thailand%20First/Thailand%20Updated%20 NDC.pdf

7 https://unfccc.int/sites/default/files/resource/BUR3_Thailand_251220%20.pdf

8 https://unfccc.int/sites/default/files/resource/BUR3_Thailand_251220%20.pdf

9 https://unfccc.int/sites/default/files/resource/BUR3_Thailand_251220%20.pdf

Private vehicles are the most popular mode of transportation in Thailand. Bangkok has the most diversified transport offer in the country, including BTS (sky train), MRT (subway), metered taxis, motorcycle taxis, Tuk Tuks. However, the city is still notorious for traffic congestion as people prefer to use private vehicles for convenience and flexibility. To travel across the country or to the suburbs, there is an abundance of minivans and buses that connect most cities and popular destinations. Thailand also has 38 airports, seven of which are international airports. It typically takes around an hour to reach anywhere in Thailand by plane. Thailand also has a rail system spanning 4,925 km (BOI), which serves every part of the country albeit it is not a high-speed train.

The national government has collaborated with GIZ to develop a National Urban Mobility Programme (NUMP) called the Thai Clean Mobility Program aiming at reducing GHG emissions from the transport sector, reducing air pollution and promoting a modal shift away from motorized private vehicles to public transport.

The development of the NUMP is a participatory process and requires several preparatory steps and discussions. These steps include:

- Building on existing sector studies to assess current funding, financing and transport planning mechanisms and implementation of cities and national government
- Identifying support needs for cities that are to be included in the NUMP (capacity, financial instruments, funding, planning procedures, institutional framework)
- Assessing the current main barriers to low-carbon transport in Thailand
- Providing recommendations for "Vision & Goal setting" to:
  - Draft a national vision for urban mobility (in line with the NDC action plan);
  - Define the objectives of the National Urban Mobility Programme; and
  - Provide strategic direction on using the various levers of action available (governance, financing, funding, capacity building, technological choices, etc.) in Thailand

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Programme (NUMP)

**Type of NUMP:** Programme NUMP

**Funded by:** BMUV

**Funding amount:** EUR 1,661,634

**Implemented by:** GIZ through the TRANSfer III Project

**Local counterpart:** Office of Transport and Traffic Policy and Planning (OTP), Ministry of Transport

**Main purpose of the NUMP:**

- Provide necessary groundwork that allows policy makers in the Thai government to make an informed decision on the implementation of the NDC action plan
- Develop a funding mechanism that supports the implementation of urban transport measures
- Provide a planning framework for urban transport planning (quality standards, clear guidance on roles and responsibilities, capacity development)

**Objectives:**

The 'Thai Clean Mobility Program' consists of three pillars:

- Congestion charging
- Set-up of a Clean Transport Fund
- Public transport electrification

**Supported activities:**

- Inter-ministerial agencies to create detailed design of the Thai Clean Mobility Program

# Status of implementation

**Project start:** 2017 Q1

**Expected project completion:** 2022 Q3

**Completed outputs:**

- Study Tour to Berlin and London (February 2020)
- Pre-feasibility study on congestion charging design for Bangkok (November 2020)
- 2 congestion charge videos for communication and educational purposes for broad public as well as for the expert and policy maker community (December 2020)
- Study for development of Clean Transport fund (December 2020)

**Next expected outputs**

- Financial mechanisms and business model solutions enhancing Bangkok public transport electrification
- Stakeholder dialogue and visioning roadmap towards Thailand Clean Mobility Programme (TCMP) implementation

# NUMP key measures and cost estimates

The following table highlights the most significant measures identified in the NUMP.

| Measure | Cost Estimate[10, 11] |
|---|---|
| Congestion Charge | EUR 662,279,406 |
| Bus Modernisation | EUR 124,902,630 |
| BTS/MRT Fare Subsidy | EUR 290,633,646 |

# Core impact indicators baselines

| Indicator | Baseline - 2016 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 68.26 Mt $CO_2$eq from the energy sector[12] |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 1.04 kg$CO_2$eq[13] |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 43 µg/m³ of PM2.5[14] |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 11 fatalities<br>/ 100,000 habitants (2020) |

10 Based on the exchange rate on 1 February 2022 at 12:00 p.m.

11 Study for development of Clean Transport fund (December 2020)

12 https://unfccc.int/sites/default/files/resource/BUR3_Thailand_251220%20.pdf

13 https://unfccc.int/sites/default/files/resource/BUR3_Thailand_251220%20.pdf

14 http://air4thai.pcd.go.th/webV3/#/History

# Highlights

## Lesson learned: less fragmentation to sustain the momentum

The electrification of public transport project faces the fragmentation of superfluous small operators, which makes it difficult for a comprehensive data collection and for them to afford fleet transformation. The NUMP is developing a new business model to support these operators and make up for their lack of sufficient credibility when it comes to them accessing financial support and getting loans from financial institutions.

Project visibility among high-level policymakers is also essential. Holding a big event is a great way to boost visibility but having a clear plan on follow-up activities afterwards to keep the momentum going is just as important to make the most out of the event. Continuity is key to keeping decision makers enthusiastic about implementing the project and agreeing to new project ideas.

## Pre-feasibility studies and capacity building activities to bolster the participatory process in 2021

The pre-feasibility study report and two introduction videos for congestion charging in Bangkok have been completed, the MRV for the Public Bus Electrification webinar and iEVTech was successfully held a well as the participationto the Women on the Move (Transforming Transportation in Asia) Initiative.

## The covid pandemic has increased the challenges posed by the trend towards the private car at the expense of sustainable transport

Due to curfews and restrictions on movement, public transport suffered from a drastic drop in ridership and, at the same time, faced with additional operating costs incurred from complying with COVID-19 countermeasures. Furthermore, the popularity of private cars was on the rise among people who can afford use it, further contributing to the trend of shifting away from public transport. With decreasing GDP, increasing public debt and public debt-GDP ratio on the rise, the transport sector experienced a drop of almost 20 per cent in the Private Final Consumption Expenditure (PFCE). As well, the 2022 budget for the Ministry of Transport was cut down by 7.4 per cent from last year.

A third wave of infections emerged in early 2021 has proven especially severe with strict containment measures reducing mobility and negatively affecting consumption and business sentiment. The economic recovery is expected to accelerate in 2022, with the annual GDP growth rate projected to rise to 5.1 percent depending on: (i) solid progress on domestic vaccination rates; (ii) an improvement in the global trajectory of COVID-19 sufficient to allow international tourism to partially recover; and (iii) the full disbursement of the recently approved THB 500 billion fiscal response package. However, for transport sector recovery, although there had been relief measures designated for small operators, a holistic policy approach is yet to be established.

# Mandalay, Myanmar

Partner city

Status of the project: **technical assistance on-hold**


## Basic Information

Urban area: **315.4 km²**

Population: **1,469,193** | Growth rate: **+2.1%**

GDP per capita: **USD 1,221 (2015)**

Modal Share

- **Formal public transport: 2.6%**
- **Cycling: 21.6%**
- **Private cars: 5.6%**
- **Private motorbikes or 2-wheelers: 70.2%**

National GHG emissions per capita: **0.31 ($tCO_2eq$)**

## Context

Mandalay is the second largest city in Myanmar and is known for being an important centre of Myanmar culture and Buddhism. Mandalay is also the main commercial and economic hub in upper Myanmar. Currently, Mandalay consists of six townships and is expanding toward the south where the modern international airport is located.

The population of the municipal area is about 1.4 million while the number of inhabitants at the metropolitan scale is over 1.7 million. According to the Mandalay City Development Concept Plan, by 2040 it is estimated that the population will grow to more than 3 million. The demographic growth will require a stronger offer of urban services, including mobility.

In the past, Mandalay was known to be a city for bicycles. Today it has become a city for motorcycles, which is by far the first mode of transportation, representing around 70% of the modal share. Since the opening of the country to the global economy in 2012, car ownership has progressed rapidly. It started however from a very low level. Public transport modal share remains limited. Today, although the city is crossed by a railway track, the only mode of public transport in Mandalay is the public bus network, with 57 bus routes.

Mandalay transportation challenges are mostly related to road congestion at peak hours. However, due to the rise in ownership of private motorised vehicles, traffic congestion is increasing together with road safety issues and air pollution. The absence of a comprehensive urban mobility plan combined with the current growth of the city are preventing major investments in the sector, especially in sustainable modes of transportation.

Mandalay's ambition is to develop a smart, green, and clean city, supported by an integrated and sustainable urban mobility system. Elaborating a long-term vision and strategy for sustainable mobility should allow to preserve and strengthen the quality of life. The city wants to promote the use of a comprehensive public transport system and limit the use of private vehicles.

Concretely, Mandalay is preparing a Sustainable Urban Mobility Plan (SUMP) which will focus on improving accessibility to public services and amenities. The SUMP should help develop a public transport network to reduce the congestion in the city centre and to improve traffic management in general. This plan will seek to professionalise private bus operators

and provide incentives to replace the old bus fleets by low carbon vehicles. Beyond these improvements of the public transport system, the SUMP will promote walking and cycling in the city. It will also help set up policies to improve road safety and air quality.

AFD is supporting both the Mandalay City Development Council (MCDC) and Mandalay Regional Government (MRG) in their efforts to develop the SUMP, strengthen local and regional capacities, and establish an observatory on urban mobility data and GHG emissions.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** AFD

**Funding amount:** EUR 500,000

**Implemented by:** AFD through MobiliseYourCity Asia

**Local counterpart:** Mandalay City Development Council (MCDC) and Mandalay Region Government (MRG)

**Supported activities:**

- SUMP Elaboration at the scale of Greater Mandalay
- Establishment of urban mobility observatory
- Capacity development of local authorities

## Status of implementation

**Project start:** February 2021

**Expected project completion:** Project on stand-by

**Completed outputs:**

- Consultant Appointed
- Pending since Feb 2021

**Next expected outputs**

- Diagnosis

**Expected impacts and results**

- Development and Endorsement of SUMP
- Improved Accessibility to Public Services
- Development of Public Transport Network
- Incentives for Bus Fleet Modernisation

## Highlights in the past year

The project has been suspended due to the current political situation in the country.

# Eastern Europe

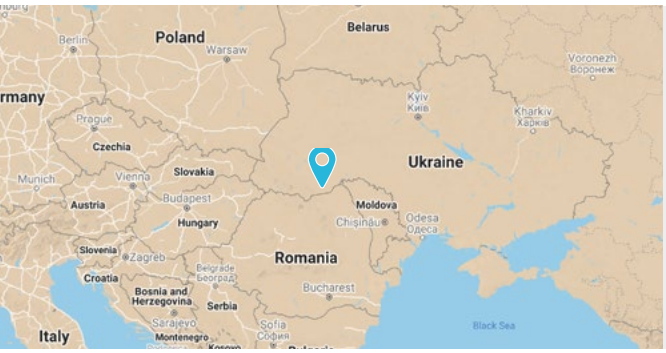
## Eastern Europe

**Completed**

# Chernivtsi, Ukraine

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **153 km²**

Population: **266,366**

GDP per capita: **USD 8,668**

*Region capital city*

## Context

Chernivtsi is located in the south-west of Ukraine, 40 km from the border with Romania. The relief is characterised by a significant difference in elevation, between 150 m and 537 m above sea level.

Chernivtsi is viewed as one of Western Ukraine's main cultural centres. The city is also considered one of Ukraine's important educational and architectural sites. It is a major regional rail and road transportation hub, also housing an international airport.

Chernivtsi has a long tradition of public transport, being home of a tramway network during 70 years from 1897 to 1967. Today, Chernivtsi passengers use several types of public transport: trolleybuses, shuttles, minibuses and taxis. The network includes 43 bus lines and 9 trolleybus lines. This offer is completed by about 20 radio taxi services providers.

The main means of public transport in the city is the trolleybus. This type of transport appeared in Chernivtsi on 1 February 1939, but was completely rebuilt after its destruction during the Second World War. The existing trolleybus network has been in operation since 1966.

## Support from the Partnership

**Technical Assistance:** Technical assistance related to transport modelling

**Funded by:** The German Federal Ministry for Economic Cooperation and Development (BMZ), Swiss State Secretariat for Economic Affairs (SECO)

**Implemented by GIZ** through the project **Integrated urban development in Ukraine.**

**Local counterpart:** City Council of Chernivtsi

**Supported Activities:**

- Capacity building related to transport modelling
- Development of transport models for Chernivtsi
- Optimisation of the public transport network through modelling based on existing SUMP

## Status of implementation

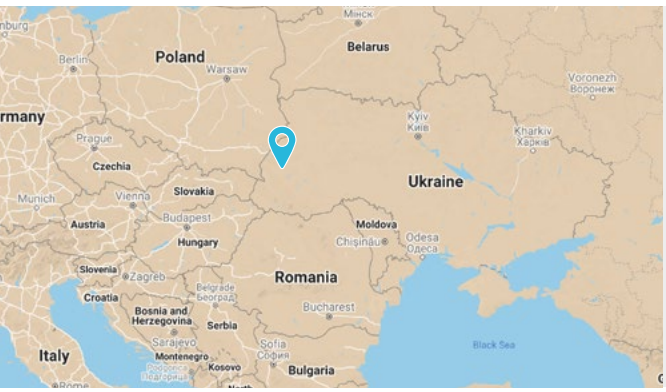
**Project start:** 2017 Q4

**Project completion:** 2019 Q4

# Lviv, Ukraine

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **171.71 km2**

Population: **734,000 | Growth rate: 0%**

GDP per capita: **USD 8,668**

*Region capital city*

## Context

Car ownership increased a lot in Lviv, which will cause traffic to become denser and denser. In the long term, this situation could become intolerable and jeopardise every effort to capitalise on the attractivity of the historic city. Parking is also an issue as it takes away valuable space for public and private transport as well as for pedestrians.

Car ownership in the Ukraine increased significantly since the independence in 1991. However, there were still only 220 motor vehicles per 1000 inhabitants in 2012 (excluding motorcycles and other two wheeled vehicles) compared to 580 in Poland or 588 in Germany. Even though figures for Lviv are far above the Ukrainian average, traffic in the city will become denser in future. Moreover, the UNESCO world heritage area is expected to attract more visitors when tourists will no longer be deterred by the political insecurities.

Public transport and traffic are not only impeded by car in movement, but also by static cars. indeed, parking in the city centre takes away valuable space for public and private transport as well as for pedestrians. In most of the European cities with a comparable historical center, let alone UNESCO heritage, cars are banned totally from the center. This is in theory true for the inner cordon of world heritage area in Lviv too but not always in practice. Moreover, the historical center of high urban value and exquisite buildings in Lviv is not confined to the UNESCO boundaries.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** The German Federal Ministry for Economic Cooperation and Development (BMZ), Swiss State Secretariat for Economic Affairs (SECO)

**Implemented by** GIZ through the project Integrated urban development in Ukraine

**Local counterpart:** City Council Lviv

**Supported Activities:**

- Capacity building for designing, applying, and implementing processes and standards of integrated and sustainable urban development
- Preparation of priority infrastructure projects and implementation of small scale, low budget, and high impact investments (quick wins)
- Establishment of suitable communication, coordination, and cooperation mechanisms

# Status of implementation

**Project start:** 2017 Q4

**Project completion:** 2019 Q4

**Completed outputs:**

- Development of the Integrated Urban Development Concept for Lviv in close cooperation with the Chief Architect and the City Institute and in accordance with the Leipzig Charter on Sustainable European Cities.
- Active involvement of the Representatives of municipal units of Lviv in the process of developing the Sustainable Urban Mobility Plan, including City Institute, Spatial Development Institute, municipal transport operator "Lvivavtodor", municipal company "Lvivelectrotrans", Department of Housing and Infrastructure, Transport office, Architecture and Urban Development Department, as well as international experts from Switzerland and Germany. Many meetings were held with residents and stakeholders.
- Organisation of a comprehensive training program called "Management Competences", aimed at improving the capacity of Lviv City Council and enhancing closer cooperation between different structural units, better coordination of projects and optimization of administrative management at both vertical and horizontal levels.
- Creation of the Green Line, the Demonstration Infrastructure Project is a pedestrian-bicycle connection from Sykhiv District to the city center, passing through green territories, an industrial zone and connecting buildings of Ukrainian Catholic University. The concept has been developed and working documentation is being prepared for the first section along the southwestern part of Park Ivan Pavlo II to Shuvar Market at Khutorivka.

**Next expected outputs**

- Continue the implementation of the Integrated Urban Development Concept
- Further implementation of objectives set out in the Sustainable Urban Mobility Plan, including transport solutions and urban space renovations in accordance with the principles of sustainable mobility
- Further work on implementing the Green Line as a good example of alternative connections in the city should be continued

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost Estimate |
|---|---|
| Implementation of e-ticketing | - |
| Acquisition of 10 low-floor trams | 10,000,000 |
| Acquisition of 100 buses | 12,000,000 |
| Acquisition of 50 trolleybuses | 12,000,000 |
| New bus depot | 12,000,000 |
| Reconstruction of 15 km of trolleybus catenary | 13,000,000 |
| Implementation of the Ukraine Urban Road Safety Program | 37,800,000 |

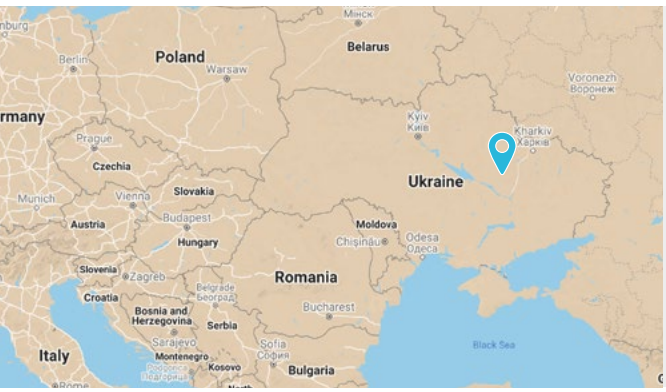
# Finance leverage

| Financing resulting from the SUMP | Source | Amount |
|---|---|---|
| Loan leveraged through MobiliseYourCity for the implementation of SUMP infrastructure, fleet and e-ticketing measures | EBRD and EIB | 59,000,000 |
| Loan for the financing of the Ukraine Urban Road Safety Program | EBRD and EIB | 37,800,000 |
| Loan for the financing of the second phase of the Ukraine Urban Public Transport Program | EBRD and EIB | 70,000,000 |
| Loan for the financing of the Lviv E-Bus project | IFC | 50,000,000 |

# Poltava, Ukraine

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **106.4 km²**

Population: **106.4 km² | Growth rate: 0%**

GDP per capita: **USD 4,621,31**

## Key facts

| City, Country | Poltava, Ukraine |
|---|---|
| **Population**[1] | 287,000 |
| **Land area (Poltava City)**[2] | 106,4 km² |
| **GDP per capita** | USD 4,621,31 |
| **Baseline motorization rate**[3] | 152 cars / 1,000 inhabitants |
| **Local Partner (organization)** | Poltava City Council |
| **Implementing partners** | Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH through the project Integrated urban development in Ukraine |
| **Donors supporting technical assistance for SUMP** | • German Ministry for Economic Cooperation and Development (BMZ)<br>• Swiss Federation State Secretariat for Economic Affairs (SECO) |
| **Amount in technical assistance** | Included in the Integrated Urban Development in Ukraine project which has a budget of 9,100,000 EUR to support multiple cities |
| **SUMP implementation timeline** | • Joined MobiliseYourCity in June 2017<br>• MobiliseDays in September 2018<br>• Start of SUMP elaboration in 2019<br>• SUMP completed and approved in 2020 |
| **SUMP Vision** | Making Poltava a more liveable urban environment and a powerful regional centre, integrated into the national and global economy. The focal points of the SUMP are strengthening the city's economy and promoting a healthier and more inclusive lifestyle. |

1 State Statistics Service

2 Poltava City Master Plan

3 Regional service center in Poltava region, Ministry of Internal Affairs of Ukraine, 2015

Thanks to the funding of BMZ, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has supported the Poltava City Council in developing a Sustainable Urban Mobility Plan (SUMP). The project includes the diagnosis of the current situation, the definition of sustainable urban mobility priorities and goals, the analysis of possible future scenarios and, finally, the identification of priority measures.
Although participatory processes had previously taken place in the city, such as online public consultations and civil society actions, the project went much further and ensured a very broad involvement of residents and specialised professionals in the area.

The implementation and development of the selected SUMP measures is expected to give access to transport to the entire population, especially low-mobility groups, increase the ecological compatibility and strengthen the economy and touristic attractivity of the city.

# Diagnosis: Urban Mobility in Poltava

Poltava is an important regional city characterized mostly by a flat territory with a maximum level of relief plains fixed at +159,2 m above sea level. The demographic growth is negative in its urban area, characterized by low fertility and high mortality rates. However, the level of motorisation until 2031 is expected to grow by 330 cars / 1000 inhabitants, which will have a significant impact on the road network and traffic of the city.

The spatial organization of the city is heterogenous. Although the average population density is high, it is very different among micro districts. The majority of workplaces and points of attraction are located in the centre, the surroundings of the southern station and in the southern part of the city. The northern part of the city is less populated.

These indicators are important for analysing the mobility of its inhabitants and the formation of a public transport system. Working trips make a significant share of traffic in the city and affect the loading of the road network in the morning peak period in the direction home - work, and vice versa in the evening.

## Mobility demand and transport services

According to the mobility survey carried out in May 2018, Poltava's daily travel rate is 2.1 trips per person. As shown in **Figure 1**, the modal split highlights the current dominance of motorized travels (car and public transport), which represent 67.6% of trips against 32.3% of non-motorised modes (walking and cycling).

75 % of households do not own a car and the share of car users is limited compared to cities of the same size in Ukraine or elsewhere in Europe. In consequence, the share of public transport is high (55.2 %), making public transport the most often-used mode in Poltava. Walking is the second most often-used mode with a share of 30.5 % of all trips.

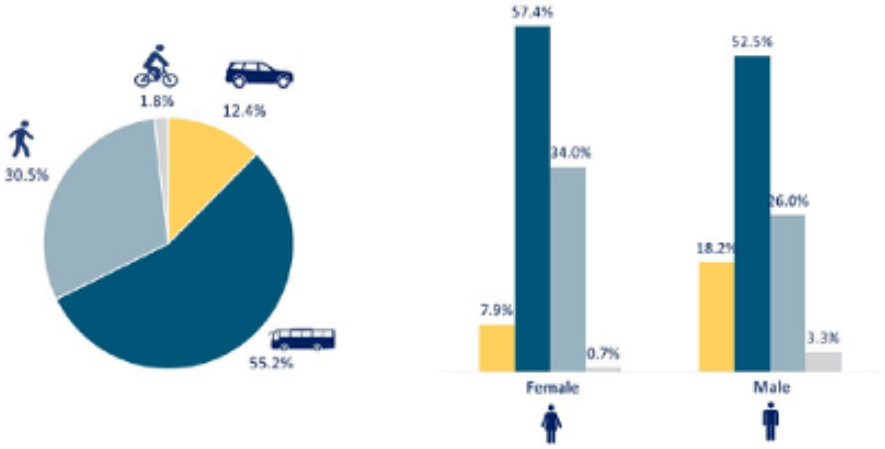



Figure 1 - Modal split

## Overview of the mobility services

*Public transport services (trolleybus and bus)*

The city counts 10 trolleybus and 65 bus routes.[4] 15% of the final stops of these bus routes are located outside the territorial borders of the city, which makes the route network of the city accessible to the population in the near settlements. 87.9% of local residents live within 500 m to public transport stops.

The length of the network of urban electric transport (trolleybuses) is 73 km, while the total length of the network of is 250 km[3] (**Figure 2**). The public transport system has 407 stopping points.

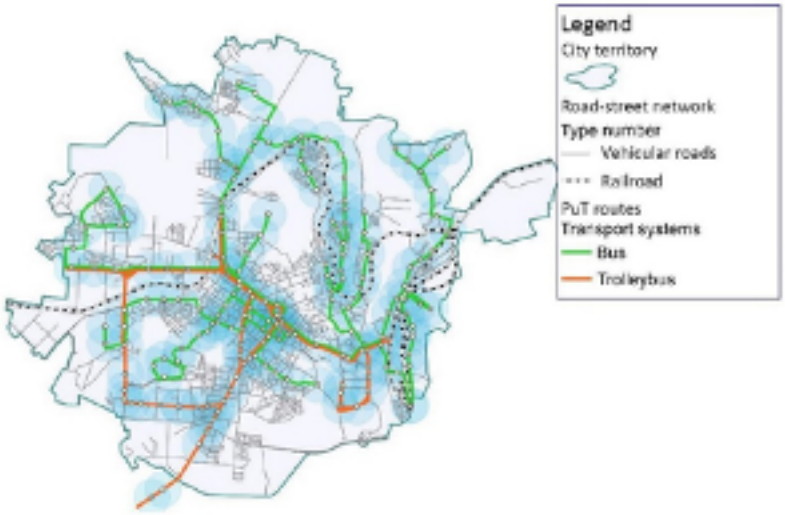



Figure 2 - Public transport network

Although the network is relatively well developed, a renewal of both bus fleet and electric trolleybuses is necessary. Today 49% of Poltava's bus fleet are low-capacity buses, while the current age of 70% of the rolling stock of the trolleybus fleet exceeds 15 years[5].

*Walking*

Streets in Poltava do not systematically consider the needs of pedestrians. An acute challenge for the city is to ensure the barrier-free pedestrian space for people with limited mobility, since 10% of Poltava's population consists of people with disabilities. Besides, all sorts of obstacles often occupy pedestrian space, which impede the free movement of pedestrian.

*Cycling*

The cycling infrastructure is still undeveloped in the city, but its geographical characteristics as well as its wide streets represent a great potential for its emergence.

*Private vehicles*

Although private cars represent a limited share of the modal split, Poltava experiences significant issues related to mass spontaneous street parking, as the city lacks a single scheme for the city parking space management, as well as a control system for parking.

4 Register of urban passenger transport routes as of December 1, 2017, Poltava Transport and Communications Department

5 According to the data of KP "Poltavaelektroavtotrans" as of 01.12.2017

## Social issues

The diagnosis revealed that the existing public transport vehicles equipment does not offer an adequate service to vulnerable groups, such as elderly people and people with limited mobility.

In addition, several surveys highlighted gender issues, especially related to cycling. Among all active bicycle users in Poltava, only 9% are women[6]. This gender gap indicates the perception of cycling as a highly dangerous mode. On the other hand, women are more likely to use electric trolleybuses compared to men.

Road safety represents an important concern in Poltava, especially for pedestrians who are the most frequent victims. Based on the analysis of heat maps of traffic violence with victims, places not meeting the minimal standards for pedestrian accessibility and barrier-free space (for example, underground pedestrian crossings) are usually the most dangerous for pedestrians in Poltava.

# SUMP vision and goals

### *Vision for urban mobility in Poltava*

*Poltava is a city of healthy lifestyles, friendly to young people, that values and support the elderly. It is a tolerant and safe city with a strong, socially responsible community.*

Poltava's SUMP identifies six main priorities and some related goals aiming at improving the mobility situation.

**Priority 1: Improving the attractiveness of public transport**

- Improve the quality of public transport services
- Introduce an efficient public transport management system
- Improve conditions for people with limited mobility
- Develop a multimodal and integrated public transport
- Prioritise public transport in traffic

**Priority 2: Improvement of parking space**

- Unload roads and sidewalks in the city centre from parking
- Provide a sufficient parking space in residential areas
- Implement parking management near public and commercial institutions
- Reduce large-sized vehicles from the city centre

**Priority 3: Collection and analysis of data and creation of an intelligent transport system**

- Create a unified information system
- Implement an electronic payment system for transport services
- Provide information to road users
- Renew infrastructure in accordance with the latest technologies

**Priority 4: Cycling development**

- Promote cycling among citizens and tourists
- Create a management mechanism for cycling development
- Improve cycling infrastructure to ensure quick and safe trips

6 According to the cyclists survey results of "CITYLAB", 2015-2016

**Priority 5: Development of pedestrian spaces and accessibility**

- Increase the attractiveness of walking as a transport mode
- Develop safe and comfortable facilities for pedestrians
- Create a municipal management system of walking facilities

**Priority 6: Increasing road safety**

- Create a safe urban environment
- Improve the traffic culture

# Key SUMP measures

Within the SUMP framework, specific measures for each priority area were identified. They can be divided into five points:

- **Infrastructure measures** to enhance inclusiveness and safe access to transport and to ensure city resilience in the long-term.
- **Management and organization measure** relevant for the development of management systems and strategic documents to support a high-quality urban environment and mobility.
- **Monitoring and data collection measures**, essential to assess the urban transport skyline and identify its problems.
- **Capacity building measures** aiming at raising the awareness of the main stakeholders, such as politicians and planners, about sustainable mobility.
- **Promotion and awareness measures** aiming at scaling up citizens' participation and understanding of the sustainable urban mobility transition.

The following table presents the main measures planned on the short term.

| Measures | Cost estimates in M€ | Proposed Financing Source | Implementation by |
|---|---|---|---|
| **Physical investments** | | | |
| **(Infrastructure, rolling stock, etc.)** | | | |
| **Short term acquisition of 11 buses** | 0.8M€ | Domestic financing | 2019 |
| **Acquisition of 40 low floor trolleybuses and modernization of 3 traction substations** | 10M€ | European Bank for Reconstructions and Development (EBRD) loan | 2021 |
| **Technical (studies, plans, designs, etc.)** | | | |
| **Setup of a working group for cycling infrastructure and appointment of a cycling envoy** | | | |

# Projected results and impact

The implementation of the measures listed before will lead Poltava to consolidate its regional importance as an ecologically oriented city desiring to improve its citizens' quality of life. The following table presents the expected results and impact.

| Impact Area | Expected Impact |
|---|---|
| **GHG emissions (SDG 11)** | Improved but not quantified |
| **Accessibility (SDG 11)** | **Accessibility for the entire population**<br>• Baseline: 87.9%[7]<br>• Improved but not quantified<br><br>**Accessibility for people with reduced mobility**<br>• Baseline: 11%[8]<br>• Improved but not quantified |
| **Air pollution (SDG 11)** | Improved but not quantified |
| **Modal share** | Percentage of total trips by public transport<br>• Baseline: 55%[9]<br>• SUMP scenario: improved but not quantified |
| **Road safety (SDG 3)** | • Baseline: 0.04 accident/ 1000 inhabit.[10]<br>• Improved but not quantified |
| **Mobilised finance (SDG 17)** | 10M€ - Loan leveraged through MobiliseYourCity (EBRD) |

7 Based on data about place of voters registration

8 Characteristics of Urban Passenger Transport, 2008

9 Estimated based of Mobility Survey, Dornier Consulting International GmbH, 2018

10 Information of the Police Department of Poltava in 2015

| | |
|---|---|
| **Infrastructure and assets with committed financing (SDG 9)** | The first priority of Poltava's SUMP is to improve the attractiveness of public transport. For that reason, most of Poltava SUMP measures are related to the optimization and reorganization of the route network. The main actions are:<br>• Reduce duplication on urban public transport routes;<br>• Unload the network from small-capacity vehicles;<br>• Reduce travel time for passengers;<br>• Optimize the transport system operational cost;<br>• Build a network with the most efficient vehicles;<br>• Increase electric transport;<br>• Introduce additional trolleybus routes;<br>• Introduce new types of public transport, such as car sharing, ride sharing (i.e., Uber), bike sharing or municipal taxis;<br>• Upgrade infrastructure in accordance with the latest available technologies;<br>• Introduce bicycle infrastructure in all areas of the city with recreational areas and tourist facilities. |
| Expected institutional impact | Poltava's SUMP includes several actions related to governance aiming at building effective management systems to guarantee the achievement of its goals and priorities.<br><br>The expected impact at the institutional level can be deducted by the following list of recommended measures:<br>• Creation of a single centralized management system of public transport in the city;<br>• Creation of a municipal management system of walking facilities;<br>• Creation and approval at the municipal level the responsible for the development of cycling transport terms of reference;<br>• Establishment of a responsible authority for the organisation and management of the unified data system;<br>• Creation of municipal service for the control of parking;<br>• Conduct regular training in the field of management, development of public transport and the collection and analysis of traffic data to members of the relevant local authorities;<br>• Development and implementation of a Programme for Street Design;<br>• The creation and approval at the municipal level the responsible for the development of pedestrian infrastructure terms of reference;<br>• Establishment of a municipal authority responsible for the road safety coordination in Poltava;<br>• Inclusion of an independent "road safety audit" component to the projects of streets repairing and reconstruction. |

# Highlights

**Two years after the adoption of the SUMP, significant progress has been made to make public transport and cycling more attractive in Poltava**

Since the SUMP was approved by the Poltava City Council in 2020, the most progress have been made in priority 1 ***increase the attractivity of public transport*** and priority 4 ***development of cycling.***

**Priority 1: attractivity of public transport**

- Effective purchase of 11 buses in 2019 as well as 40 low-floor new trolleybuses in 2020 (financed by EBRD).
- Real-time information systems to passenger, including mobile app and GPS trackers embedded in trolleybuses.
- Transport model has been developed to improve public transport routes.
- 23 public transport stops repaired, 10 equipped with real-time information systems to passenger.
- Preparation of EUR 4.5 million investment project by the European Investment Bank (EIB), to develop the trolleybus network lines and infrastructure, including power station.
- Process to integrate fares has started.

**Priority 4: development of cycling**

- A working group has been created for cycling infrastructure development.
- Specific action plan for cycling in Poltava has been prepared and approved.
- The development of bicycle infrastructure is ongoing, with further support from GIZ, including bike park installations for schools, libraries and sport infrastructures, shared bicycle for public administration and the identification of new cycling routes.
- Communication and advocacy efforts have been made in the local media and schools, in collaboration with the police services, to improve attractivity but also safety of cycling in Poltava.

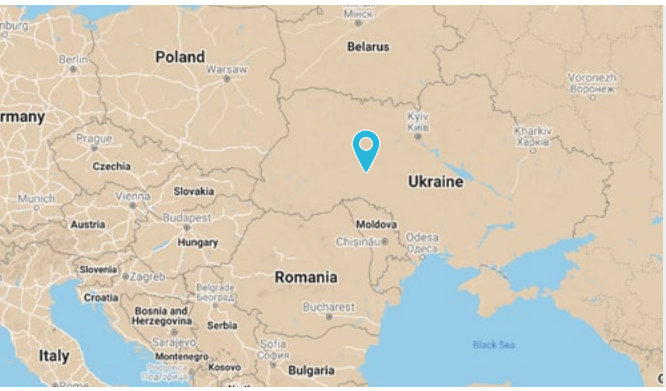
# The political situation is impeding the domestic financing of SUMP measures

The main obstacle for the SUMP implementation is the access to domestic public financing, aggravated by the political situation, and the reallocation of budget to national defence. As international tensions have transitioned to a military conflict with the Russian Federation, there is hardly any perspective that this situation will improve in the short term.

# Vinnytsia, Ukraine

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **113 km²**

Population: **369,900 (2018) | Growth rate: 0,27%**

GDP per capita: **USD 8,668**

*Region capital city*

## Context

The city of Vinnytsia has a relatively well-structured transport network that serves most housing and employment districts and connects them with the centre. The size of the system is optimal for trams and buses, but railway and vast industrial areas represent a barrier for soft modes of transport.

Topography, hydrography, and industrial infrastructure have a strong influence on the development of the road network. Only few relations exist over the Southern Bug river. A direct connection between outer districts does not exist, and most of outer districts have low population and employment density.

The recent developments have been strongly oriented toward individual motorized traffic, and there is room for improved traffic management, profiles of the existing streets offer enough space for all different modes of transport, including cycling, and for quality urban space with tree lined avenues.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** The German Federal Ministry for Economic Cooperation and Development (BMZ), Swiss State Secretariat for Economic Affairs (SECO)

**Implemented by:** GIZ through the project Integrated urban development in Ukraine

**Local counterpart:** Vinnytsia City Council

**Supported activities:**

- Capacity building for designing, applying, and implementing processes and standards of integrated and sustainable urban development
- Preparation of priority infrastructure projects and implementation of small scale, low budget, and high impact investments (quick wins)
- Establishment of suitable communication, coordination, and cooperation mechanisms

## Status of implementation

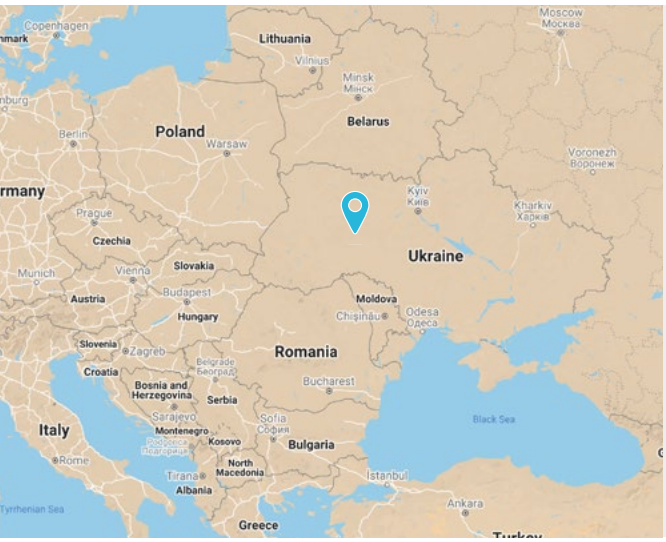
**Project start:** 2017 Q4

**Project completion:** 2019 Q4

# Zhytomyr, Ukraine

Partner city

Status of the project: **completed technical assistance**




## Basic Information

Urban area: **93 km²**

Population: **264,300 (2018)**

GDP per capita: **USD 8,668**

Modal share:

- **Motorized vehicles: 15%**
- **Public transport: 46%**
- **Walking: 37.8%**
- **Cycling: 1.3%**

*Region capital city*

## Context

Zhytomyr is a city in the north of Ukraine, and is an important hub of inter-city road transport, due to its position as a crossroads between Kiev and the western cities of the country. It is also an important railway hub linking Kiev, western Ukrainian cities, Minsk, and Russia via Belarus.

The city has a long tradition of electric public transport, with the adoption of the tramway in 1988, and the trolleybus since 1962. The trolleybus network grew steadily until 2008, when it was streamlined from 19 to 11 lines. Every year, the city's trams and trolleybuses carry almost 40 million passengers. The length of the electric transport routes reaches 125 km.

Several transport and mobility related challenges were identified during the SUMP preparation process. The fleet of public transport rolling stock needs to be updated. The average age of the trolleybus is 27.5 years, the tram is 32.5 years old and the standard period of operation is 10 and 15 years, respectively. Road accidents are frequent and road markings are absent on a variety of secondary roads and alleys, where it is particularly important to replenish the markings. In terms of walking infrastructure in the city, Zhytomyr has a problem of narrow pedestrian walkways, which are common in residential areas. Most traffic lights have no sound equipment. The street lighting focuses only on roads, which leads to insufficient lighting on the sidewalks.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** The German Federal Ministry for Economic Cooperation and Development (BMZ), Swiss State Secretariat for Economic Affairs (SECO)

**Implemented by** GIZ through the project Integrated urban development in Ukraine

**Local counterpart:** City Council Zhytomyr

**Finance leverage:** EUR 10,000,000

**Supported activities:**

- Capacity building for designing, applying, and implementing processes and standards of integrated and sustainable urban development
- Preparation of priority infrastructure projects and implementation of small scale, low budget, and high impact investments (quick wins)
- Establishment of suitable communication, coordination, and cooperation mechanisms

# Status of implementation

**Project start:** 2017 Q4

**Project completion:** 2019 Q4

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

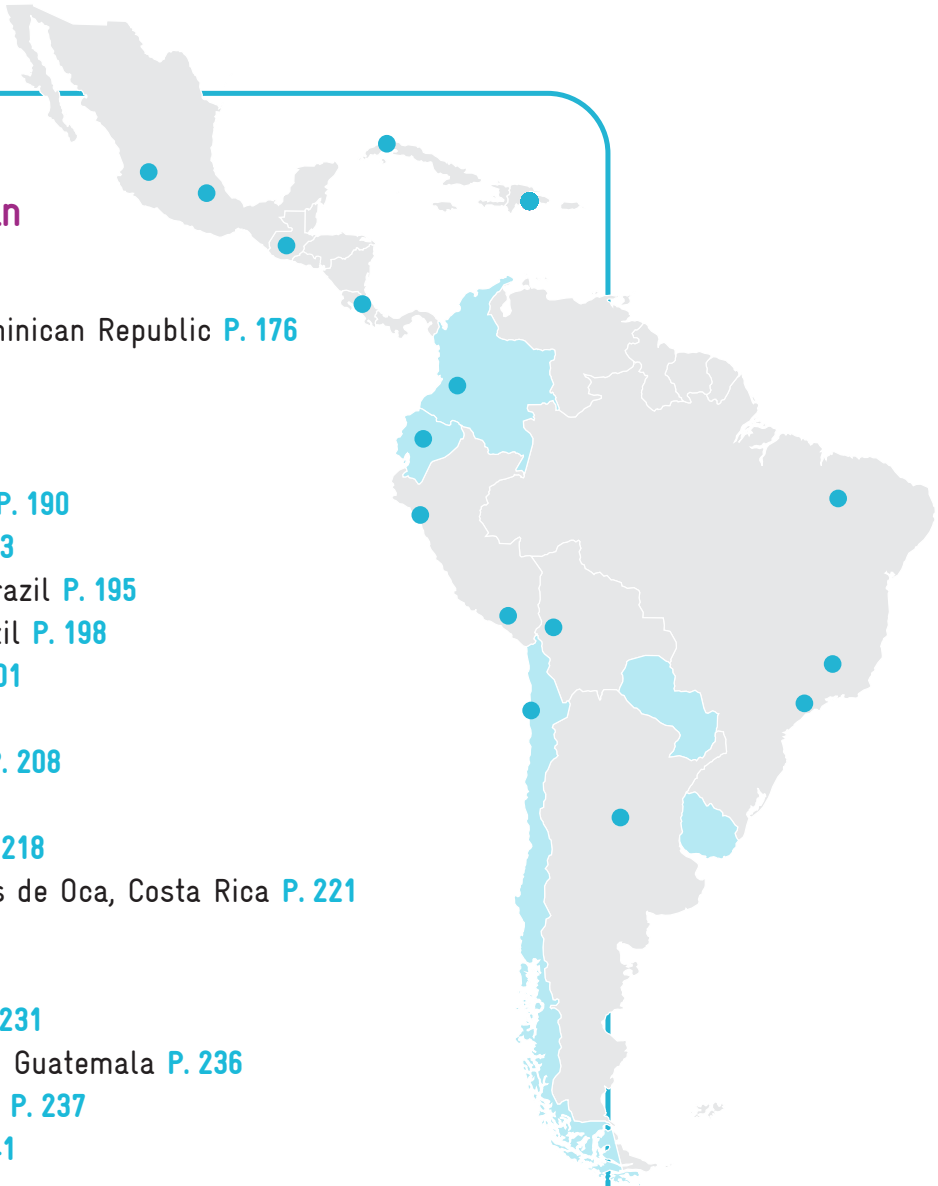
| Measure | Cost Estimate |
|---|---|
| Reconstruction of central streets and sidewalks (in progress 2019 -2020) | Not available |
| Envoy for bicycle transport is needed within the structure of the city administration | Not available |
| Further work on the concept of changes of Sobornyi and Peremohy squares, elaboration of feasibility studies, looking for funding | Not available |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

# Finance leverage

| Financing resulting from the SUMP | Source | Amount |
|---|---|---|
| Trolley buses | EBRD | EUR 10,000,000 |

# Latin-America and the Caribbean



## Latin-America and the Caribbean

### Completed

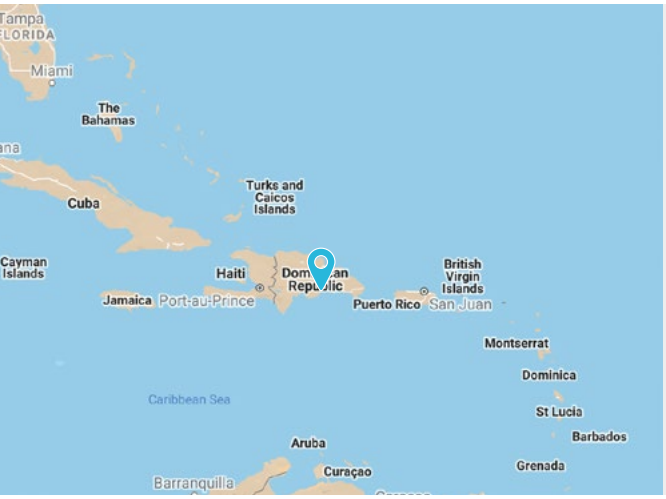


### Ongoing

# Santo Domingo, Dominican Republic

Partner city

Status of the project: completed pilot project




## Basic Information

Population: 3.66 Million

Urban area: 1,300 km$^2$

Motorization rate: 155.5 vehicles per 1000 inhabitants

Transport emissions per capita: 128 g $CO_2$eq

GDP per capita: USD 9,700

| Critical mobility challenges | The SUMP in a nutshell<br>**Selected SUMP Measures**<br>Total plan $ 2.6 billion for urban mobility, from which $1.25 billion already financed | Projected SUMP impact in 2030 |
|---|---|---|
| Only 10% of the population has access to formal public transport | **$ 1.8 billion** to build a public transport offer with over. | • Annual greenhouse gas emissions reduced by 20% in 2030<br>• Increase access to formal public transport from 10% to 43% of the population of Gran Santo Domingo<br>• Increased modal share of all public transports combined from 36% to 44%<br>• 110 km of mass rapid transit lines |
| Predominance of private cars and informal transport services | From which:<br>• **$ 1 billion** to extend and improve the metro network<br>• **$ 763 million** for BRT, tramway and buses<br>• Improvement of attractivity, inclusivity and communication of public transport<br>• $ 656 million for improved roads and streets<br>• Modernisation policies for private and public transport vehicles | |
| Transport inequality: very poor conditions of transport for users without a private car | • **$ 47 million** for non-motorised transport infrastructure and a green corridor along the river<br>• **€ 15 million** for a bike-sharing system<br>• Social tariff policy | • 150 km of new or improved cycle lanes<br>• 150 km of new or improved sidewalk<br>• Improved affordability of public transport |
| Wide variety of non-integrated transport services | • Integrated tariff policy | • Leading role of the **new transport authority INTRANT** |

# Key facts

| City, Country | Santo Domingo, Dominican Republic |
|---|---|
| **Population** | 3.4 million |
| **Land area** | 1,300 $km^2$ |
| **GDP per capita** | USD 9,700 |
| **Baseline motorization rate**[1] | 155.5 vehicles per 1000 inhabitants |
| **Annual transport emissions per capita**[2] | 128 g $CO_{2eq}$ |
| **Local Partner (organization)** | Instituto Nacional de Transporte Terrestre (INTRANT) |
| **Implementing partners** | Agence Française de Developpement (AFD) |
| **Donors supporting technical assistance for SUMP** | Agence Française de Developpement (AFD), European Union (EU), Inter-American Development Bank |
| **Amount in technical assistance** | ~ 550,000 USD |
| **SUMP Implementation timeline** | • Joined MobiliseYourCity in June 2017<br>• MobiliseDays in October 2017<br>• Start of SUMP in March 2018<br>• SUMP completed and approved in September 2019 |
| **SUMP Vision** | An integrated approach to improve access to sustainable mobility services and socioeconomic opportunities for all citizens by integrating urban and transport planning, enhancing sustainable transport modes, and strengthening institutional, technical, and financial capacities of local transport authorities. |
| **Key expected results (GHG, modal share and access)** | Compared to 2018, in a SUMP scenario by 2030 Santo Domingo can expect to<br>• Increase access to public transportation to 43% of Santo Domingo citizens from 10%<br>• Increase total trips taken by public transport to 44% from 36%<br>• Reduce GHG emissions by 30% compared to a business as usual (no SUMP) |
| **Total SUMP Investment Requirement** | USD 2.6 billion<br><br>**Mass transit (CAPEX + OPEX - annual)**<br>• 2018 (Baseline): 60<br>• 2023 (SUMP): 64<br>• 2025 (SUMP): 160<br>• 2030 (SUMP): 200 |

1 For comparison with motorisation rates in European capital cities, Berlin has a motorisation rate of 330 car per 1000 inhabitants, and other capital cities in Austria, Belgium, Denmark, France, Hungary, Ireland and the Netherlands have a motorisation rate under 450 cars per 1000 inhabitants. Source: Eurostat Regional Yearbook 2020.

2 For comparison, the annual transport (except air travel) emissions per capita in Germany are 1.61 tC02eq. Source: Die Umweltwirtschaft in Deutschland: Entwicklung, Struktur und internationale Wettbewerbsfähigkeit. www.umweltbundesamt.de

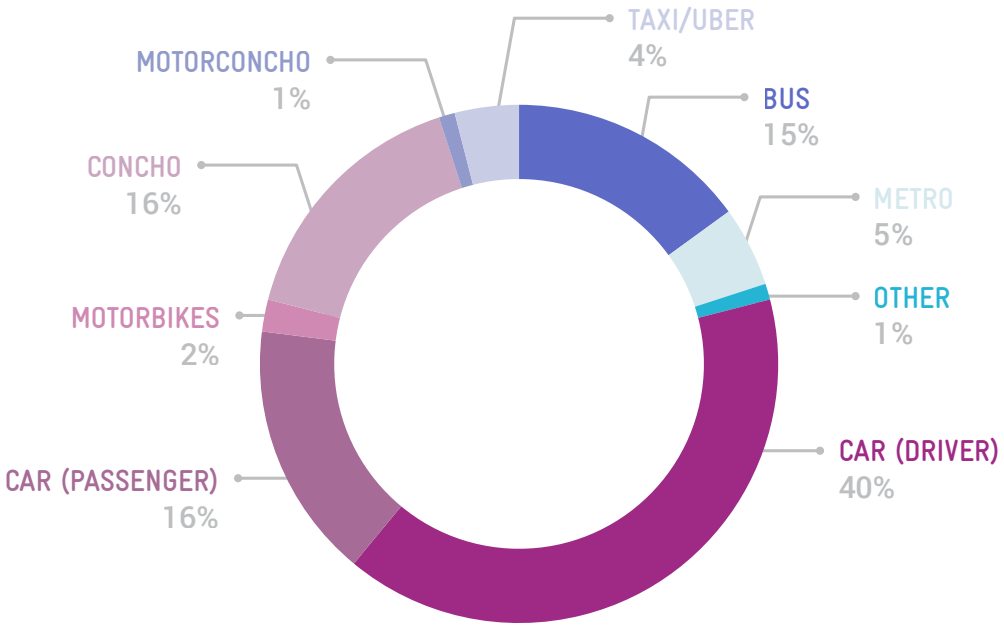
# Diagnosis of urban mobility in Santo Domingo

## Existing Mobility and transport services

Located in the Caribbean region, Santo Domingo is the administrative, economic, and political capital of the Dominican Republic. With a population estimated at more than 3.5 million inhabitants, representing one-third of the total country population, and with a projection of 4 million in 2030, Santo Domingo is a dynamic fast-growing city.

The current system of transportation in the City of Santo Domingo has been mostly the result of historically unregulated, uneven, and rapid urbanization. The results are vastly different levels of service, socio-economic activities, and quality of life across the city's municipalities. The starkest differences can be observed between the city centre – the 'National District' – and its periphery, the latter being particularly affected by the lack of public services, including formal public transport.

This development pathway has fostered a transport system that is mainly based on motorized individual transport, with little consideration of public spaces and pedestrians and a nearly complete disregard for cyclists. Currently, motorization rates range from 40 to 60 per cent depending on the municipality. Additionally, the high urban density in the National District and the very narrow main roads in the peripheral municipalities heavily constrains the ability to expand public spaces and to repurpose current roads for mass rapid transit services.

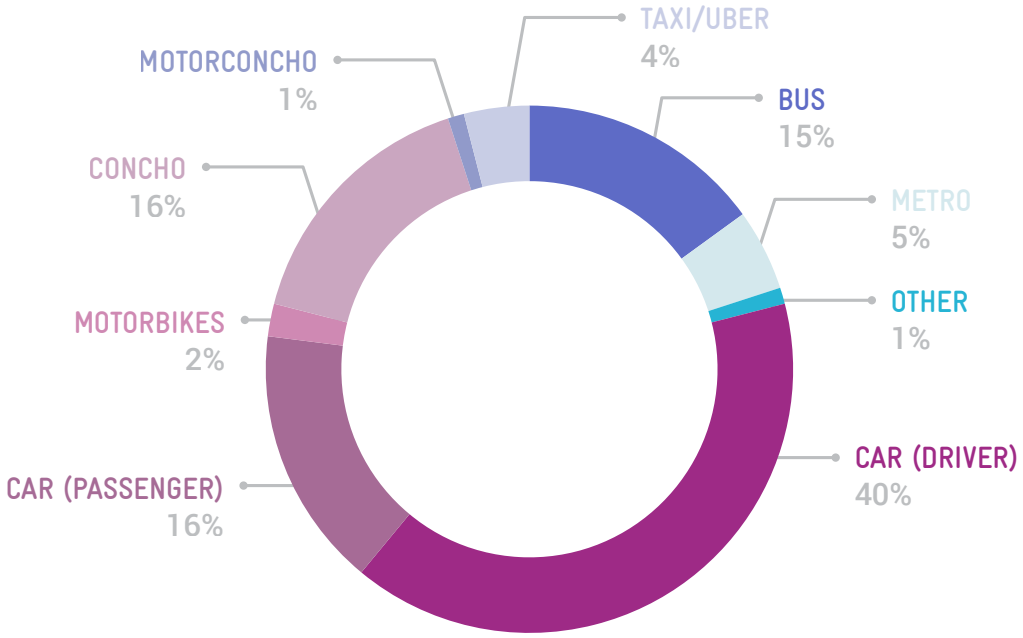



**Graph 1:** Modal share in Santo Domingo

Public Transport in the city comprises a wide variety of formal and informal services. The formal system comprises 2 metro lines, 1 aerial tramway line and 11 bus lines, the latter being serviced by a relatively small fleet of 160 buses operated by a state-owned bus company. The informal services are constituted by 3,000 mini- and microbuses and 16,000 informal taxis (so-called 'conchos') that operate along 84 and 114 fixed lines, respectively. These numbers reveal the predominance of informal over formal transport: 14% of total trips are made with conchos, 13% with buses and 9% with the metro.

## Social, environmental, and economic aspects.

The prevalence of informal transport, together with high motorization rates, means that mobility is highly fragmented and atomized. This not only results in high congestion and long commuting times (>1 hour/day). Informal transport services are also characterized for being uncomfortable and insecure. The inferior quality of service is partly compensated by cheaper fares. However, because fare policy lies at the hands of informal transport associations, they may abuse this power to set fares at unreasonably high levels. Self-regulation has also resulted in low-quality standards in terms of a deteriorating vehicle fleet (75% of the vehicles are more than 15 years old) and under-qualified drivers. These factors contribute to both high levels of traffic accidents, air pollution and GHG emissions. Consequently, informal taxis and private cars account for the highest share of the sector's GHG emissions, accounting for 16% and 56% of total emissions, respectively.




**Graph 2:** GHG emissions by transport mode

Mobility is heavily influenced by gender. On average, men make 0.5 more trips than women a day. This is explained partly by the fact that 40% of men are employed, whereas only 26% of women have a full-time job and the other 25% stay at home.

## Institutional and financial situation

Until the passing of Law 63-17 in 2017 the institutional landscape was equally characterized by a high degree of fragmentation and low regulatory and enforcement capacities of public authorities which allowed for the mostly unregulated development of public transport in Santo Domingo.

Since 2017, INTRANT has been established as the national road transport authority with the purpose of centralizing all regulatory and decision-making competencies regarding public transport. Among its central tasks, INTRANT is responsible for regulating and formalizing public transport by establishing minimum service and quality standards as a precondition for licences, centralizing fare policy and promoting the corporatization of informal operators in order to facilitate their participation in the integrated public transport system that is currently under development.

Despite the creation of INTRANT, the financial landscape is still fragmented at the national level across various ministries and very limited at the municipal level, which makes the latter dependent on the former. It is expected that INTRANT will help channel, manage, and leverage financial resources and improve coordination among central stakeholders.

# The SUMP preparation process and stakeholder involvement

Several participatory formats were selected for stakeholder involvement.

- Steering committee to communicate the progress of the SUMP, discuss and decide on political decisions.
- Bilateral meetings to present and discuss technical and political decisions with municipalities and ministries.
- Focal groups to work on topics selected by INTRANT (public space with neighbourhood committees; school transport with educational institutions and parents).
- Face-to-face interviews and working tables to enhance knowledge of specific sectors (logistics) or geographic areas (municipalities).

# Vision and goals

**Strategic Vision:** An integrated approach to improve access to sustainable mobility services and socioeconomic opportunities for all citizens by integrating urban and transport planning, enhancing sustainable transport modes, and strengthening institutional, technical, and financial capacities of local transport authorities

**SUMP Goals and targets**

- Develop a comprehensive and integrated transport network that responds to the different realities of the constituting municipalities and the increasing demand for mobility.
- Guarantee equal access to the population as a whole and (re-)establish connectivity in areas affected by natural and infrastructural barriers.
- Promote the use of sustainable modes of transport (collective and active) and enhance the public transport network, improve, and expand walking and cycling infrastructure and integrate urban and transport planning
- Align and strengthen institutional, technical, and financial conditions for the implementation of a sustainable mobility system

# Test scenarios and selected scenario

Three specific scenarios were defined in order to assess the impact of the SUMP, each one developed with a different level of ambition.

- Baseline scenario: no SUMP implementation takes place, but existing laws and regulations are implemented. These include organizing and regulating the public transport network, enhancing the metro and aerial tramway systems, developing a vehicle modernization program for buses and informal services, among others.
- Central scenario: this scenario builds on the baseline but assumes additional measures are implemented, such as enhancing road infrastructure, integrating transport modes, increasing accessibility, creating an investment fund for public transport, and achieving 100% modernization of the current fleet.
- Ambitious scenario: this scenario includes additional milestones by factoring in the establishment of a robust financial system with a wide variety of financing sources and instruments (incl. congestion charging and property tax), the inclusion of transport demand management measures, promotion of active and collective transport modes, and the creation of additional incentives to companies and individuals to shift to sustainable transport modes.

The ambitious scenario was selected by INTRANT as the basis for the subsequent definition and selection of measures. The measures selected and the expected impacts of the ambitious scenario are presented in the following sections.

The city of Santo Domingo has opted for the ambitious scenario.

# Key SUMP measures

| Measures | Cost estimates (million USD) | Proposed Financing Source | Implementation schedule (year) |
|---|---|---|---|
| **Physical (Infrastructure, rolling stock, etc.)** | | | |
| Metro Lines 1 & 2: Increase passenger capacity | 480 | OPRET[3], donors (AFD) | 2019-2024 |
| Metro Line 2: Line extension | 564 | MOPC[4], donors | 2025-2030 |
| Construction of 5 BRT or LRT corridors | 603 | MOPC, donors | 2021-2025 |
| Construction of 4 aerial tramway lines | 159 | MOPC, donors | 2021-2030 |
| Creation of 5 express busway lines | 1,51 | MOPC, donors | 2019-2030 |
| Infrastructural improvement of intermunicipal networks | 606 | MOPC | Until 2025 |
| Infrastructural improvement of internal municipal networks | 50 | MOPC | Until 2023 |
| Improvement and expansion of sidewalks and cycling lanes | 42 | MOPC, municipalities | Until 2023 |
| Integration of public transport modes | 0,3 | INTRANT | Until 2020 |
| Implement a public bike-sharing system | 15 | MOPC, municipalities | Until 2030 |
| Develop a 'green' corridor along the river basin | 5 | Municipalities, MOPC | Until 2025 |
| Provide parking areas in port zones | 0,3 | AUPORDOM | Until 2023 |
| **Technical (studies, plans, designs, etc.)** | | | |
| Design of secondary (complementary) bus network | 0,3 | INTRANT | 2029-2030 |
| Study on school transport services | 0,3 | INTRANT | 2021-2023 |
| Studies on improvement of transport demand management | 1 | INTRANT | 2021-2023 |
| Improve access to persons with disabilities | 0,6 | INTRANT, MOPC, municipalities, operators | Until 2023 |
| Improve image and attractiveness of bus system | 20 | Municipalities, MOPC, operators | Until 2023 |
| Improve communications of public transport services for users | 0,6 | INTRANT, donors | Until 2023 |
| Integrate city-port interface management in national and local planning | 0,3 | AUPORDOM[5] | Until 2025 |
| Implement merchandise delivery and pick-up plan in port areas | 0,3 | AUPORDOM | Until 2023 |
| Studies to support urban and transport planning integration | 0,6 | INTRANT, municipalities | Until 2025 |
| **Policy & regulation** | | | |
| Integrated tariff policy | 0,6 | INTRANT, operators, government | Until 2025 |
| Social tariff policy | 0,6 | INTRANT, operators, government | Until 2025 |
| Transport demand management policy | 0,6 | INTRANT | Until 2023 |
| Private vehicle fleet modernization policy | 0,3 | INTRANT, Ministry of finance | Until 2023 |
| Bus fleet modernization policy | | operators | Until 2023 |
| Parking policy | 0,6 | INTRANT, municipalities, MOPC | Until 2030 |
| Regulation of HDV transit | 0,3 | INTRANT | Until 2023 |
| **Total cost** | **2.556,11** | | |

3 National transport planning authority (Oficina para el Reordenamiento del Transporte)

4 Ministry of public works and communications

5 National port authority

# Expected results and impact

| Impact Area | Expected Impact |
|---|---|
| GHG emission (SDG 11) | Yearly reduction of GHG emissions relative to 2018 (baseline year)<br>• 2023: -4%<br>• 2025: -7%<br>• 2030: - 20% |
| Accessibility (SDG 11) | Percentage of the total population with access to public transport<br>• 2018 (baseline): 10%<br>• 2023: 25%<br>• 2025: 36%<br>• 2030: 43% |
| Air pollution (SDG 11) | Not quantified |
| Modal share | Percentage of total trips being realized with Public Transport<br>• 2018 (baseline): 36%<br>• 2023: 39%<br>• 2025: 41%<br>• 2030: 44% |
| Road safety (SDG 3) | Not quantified |
| Mobilised finance (SDG 17) | Leveraged international finance<br>• EU-CIF: 10 M€ (secured, until 2023)<br>Associated international and domestic investments<br>• AFD: 436 M€ (planned, until 2030)<br>• Domestic finance and AFD: 245 M€ (secured loan)<br>• Domestic finance and AFD: 590 M€ (planned loan) |
| Infrastructure and assets with committed financing (SDG 9) | New roads to be built by 2030<br>• KM of sidewalks: 150 km<br>• KM of cycle lanes: 150 km<br>• KM of mass rapid transit lines: 109,3 km |
| Expected institutional impact | The recently created road transport authority, INTRANT, will reduce institutional fragmentation by centralizing regulatory and planning functions. This will contribute to improved cooperation between the sector's strategic, tactical, and operational levels.<br>The leading role of INTRANT in the development and implementation of the SUMP will help channel and leverage additional financial resources from private, public and international stakeholders for the implementation phase.<br>Not only is the new institutional arrangement in the sector a necessary step for building capacity and rationalizing authority. Moreover, the SUMP process offers itself as a great learning opportunity. |

# Lessons learned

**The importance of a leading transport authority**

The creation of a state-level transport authority opens a new perspective for urban mobility governance and management. The recently created road transport authority, INTRANT, will reduce institutional fragmentation by centralizing regulatory and planning functions. This will contribute to improved cooperation between the sector's strategic, tactical, and operational levels.

The leading role of INTRANT in the development and implementation of the SUMP will help channel and leverage additional financial resources from private, public, and international stakeholders for the implementation phase. Not only is the new institutional arrangement in the sector a necessary step for building capacity and rationalizing authority. Moreover, the SUMP process offers itself as a great learning opportunity.

**A radical change in priorities**

Santo Domingo's SUMP may serve as a reminder of an indisputable fact: a sustainable, attractive, accessible, and safe transport system can only be realized by an enabling physical infrastructure that prioritises public and active transport. The city's SUMP is an example of transport planning done right. As the saying goes, "if you plan for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places".

# Progress on implementation

Following the formulation of Santo Domingo SUMP, the implementation was started. The European Union supports the SUMP implementation through the Caribbean Investment Facility and technical assistance implemented by the AFD for 10 million euros. The project is known as Assistance for the Implementation of the Sustainable Urban Mobility Plan (AISUMP). It consists of two main components:

1. the reinforcement of service capacity related to the National Urban Mobility Plan in the Dominican Republic focused on non-motorised transport, public transit, smart mobility and institutional strengthening; and
2. the implementation of the SUMP from Gran Santo Domingo with pre- or feasibility studies and pilot projects.

This technical assistance is provided to INTRANT for four years. It aims at supporting the implementation of the SUMP actions, tender processes, overseeing contract execution and at reinforcing technical capacities. These efforts aid the city in transitioning between the SUMP planning process and the implementation phase.

# Prioritisation of SUMP projects

While the SUMP provides a general overview of the vision of urban mobility in the city, the AISUMP defines concrete actions in the short term to advance implementation. This mainly involves transitioning from SUMP measures to project preparation. In Santo Domingo's case, early SUMP projects include the transformation of the public transport system, electromobility deployment, active mobility promotion, and traffic management and urban logistics. In total, 18 projects have been identified as high-priority in the first year of the technical assistance. The priorisation was done based on a dialogue among different public authorities.

**Integrated public transport system and paratransit sector**

Besides the extension of the metro lines, feasibility studies of two new BRT corridors are under preparation. Moreover, some '***conchos***' unions have started the formalisation process by creating bus companies. 400 of these conchos have been replaced by 30 buses in the first intervened corridor in Santo Domingo. The transformation of the paratransit sector in the city includes actions to train drivers, increase operational and organisational capacities of former concho unions, and defining the role of INTRANT to manage institutional relationships with the recently formed bus operators. The technical assistance has contributed to depict alternatives to reach fare integration and subsides. Lastly, a new transport model is under development to support decision-making, assess scenarios and quantify the impacts of transport interventions.

### Electromobility

As the Dominican Republic has experienced a growth in electric vehicle use, momentum to engage private companies in the further deployment of electromobility is in place in Gran Santo Domingo. In 2020, city officials visited Bogota to see first-hand its experience in the sector, especially regarding public transport. The first BRT corridor is expected to be operated with electric buses.

### Active mobility

Especially in the 'National District' where most of the economic activities and the historical centre are located, there is an intention from the local government to strengthen the use of active modes. 10 km of cycling lanes have been built which inspired the production of nationwide cycling-lanes implementation guidelines. Supported by European funds, additional 40 km are expected to be built as a pilot project in Santo Domingo. Initiatives such as the bike-sharing system, under formulation, leverage the interaction between mobility and economic development.

### Traffic management and urban logistics

Traffic officers are trained in good practices regarding traffic management and law enforcement aligned with the new law on urban mobility. A Regional Road Plan is under development aiming at defining a regional logistical network of major road infrastructure projects.

## Main SUMP implementation challenges

- The institutional capacity of the recently created INTRANT is limited considering the long list of urban mobility projects proposed in the SUMP. Although highly knowledgeable, the staff is still small for the needs of the city. Moreover, experts on urban mobility trained in the Dominican Republic are rare. Local universities do not thoroughly offer formations on urban transport planning, so qualified young professionals are not trained locally. Since most of the INTRANT staff acquired experience abroad. they face challenges in dealing with context-sensitive issues related to the 18 prioritised projects.
- Financial resource assignation is not guaranteed since budgets are defined at the national level. Urban mobility projects compete for funding against other sectors. The upside is that urban transport is one of the few sectors that have the potential to generate revenue (coming from e.g. fares, on-road parking, fines), and these earnings could be directed to SUMP initiatives.
- Political commitment is needed to maintain the momentum to develop sustainable urban mobility projects in Santo Domingo. Many interventions are not popular as they intend to break the status quo and spatial distribution of streets. For instance, community opposition for cycling lanes implementation on car-road space is usual, as the number of urban cyclists is low. Decision-makers need to be trained in and informed about the sustainable mobility paradigm. Both support of civil society organisations and availability of international funding help to position the topic in the political agenda.
- Multi-level coordination requires a constant flow of information and exchange between national and local authorities. This articulation helps to clearly define responsibilities for the implementation of SUMP projects, as many of them require national approval but local regulation.

# Trujillo, Peru

Partner country

Status of the project: **completed technical assistance**


## Basic Information

Urban area: **1,769 km²**

Population: **962,369 (Census 2017)** | **Growth rate: 1.65%**

Type of city: **Region capital city**

GDP per capita: **USD 6,942**

Modal Share

- **Public transport: 31.2%**
- **Walking: 18.4%**
- **Cycling: 1.1%**
- **Private cars: 15.5%**
- **Taxis: 25.4%**
- **Other: Collective cabs: 8.4%**

National GHG emissions per capita: **3.05 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

## Context

Trujillo, a coastal city in northern Peru, is the capital of the province of the same name. Its geographic location and connectivity with the major cities on the coast and in the highlands of northern Peru make it an important economic centre. The aforementioned factors and the existence of the CHAVIMOCHIC irrigation project, which was started in the 1960s by the National Development Institute (INADE) and extends throughout much of the coast of the La Libertad Region, have contributed to the growth of sectors such as export agribusiness, mining, fishing, and commerce. These sectors contribute the highest percentage to the regional GDP.

The metropolitan area of Trujillo generates 2,298,000 trips per day, with an average rate of 2.4 trips per person/day. Of these trips, 80% represent motorized transport, of which urban passenger transport services represent 65% (provided through the services of minibuses, combis, collective taxis, and cabs). Trujillo does not have an integrated transport system, but in the next few years, the first road corridor for busses is expected to be implemented. This corridor will link the northern and southern parts of the city with a Bus Rapid Transit (BRT) system. This measure represents one of the priorities for the city in their Sustainable Urban Mobility Plan (SUMP), as well as non-motorized transport measures (i.e. implementation of 25km of temporary bicycle lines). This SUMP is a key in the efforts of local government to transform their mobility by implementing sustainable and safe transport and mobility solutions. To develop this SUMP, local government represented by the Provincial Municipality received technical assistance from the German cooperation for development, implemented by GIZ.

The Ministry of Transport and Communications (MTC), through the National Program for Sustainable Urban Mobility (Promovilidad) seeks to develop integrated transport systems in cities other than the Peruvian capital. To achieve this, Promovilidad offers technical assistance to local governments. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

Trujillo Provincial Municipality (MPT for its Spanish initials), the local counterpart, possesses entities that are specialised in urban transport and urban mobility within its institutional structure, such as Transportes Metropolitanos de Trujillo (TMT), the planning organism of urban transport in the metropolitan area of the city, and the Transport, Transit and Road Safety General Office (GTTSV for its Spanish initials) the cargo and passenger transport regulatory and supervisory area). In addition, the Municipality created in 2018 the Sustainable Urban Mobility Committee (COMUS for its Spanish acronym), a participatory coordination space chaired by the mayor and formed by representatives of institutions and relevant local stakeholders.

Due to its administrative competencies, the MPT manages the implementation of investment projects and all measures that contribute to improve public transport services, ensuring sustainable urban mobility for the population. Although they do not have significant funding, they are implementing a network of temporary bicycle lanes through an agreement with MTC for 500,000 EUR. In addition, the MPT authorises and supervises the current transport service with its own resources. Through cooperation agreements between MTC and international institutions, it has been possible to finance important studies, such as the one carried out for the proposal of the north-south road corridor, financed by funds from the German Cooperation through KfW.

Optimising traffic flow, as well as implementing an integrated and efficient public transportation system, are key elements in mitigating greenhouse gas (GHG) emissions. It also reduces transport costs and improves the quality of life in urban areas. Based on this context, the Peruvian government has developed the NAMA TRANSPerú, which consists of a series of measures to transform the urban transport sector. One of the areas prioritised as part of this matrix highlights the need to support local governments to improve the transport sector.

The goal of Trujillo's SUMP 2020 - 2030 is to improve urban mobility conditions in the city, prioritising the use of public transport and non-motorized modes, while improving the quality of life of their inhabitants. Therefore, Trujillo's SUMP is perfectly aligned with MTC's urban transport sector strategy, represented by the National Urban Transport Policy and the National Program for Sustainable Urban Mobility. Likewise, this local planning instrument promotes modes of travel with less environmental impact, an integrated, multimodal, low-carbon, and efficient public transportation system, accessibility, and social equity. These are the new challenges that the MPT is taking on and has already implemented in the city.

Technical assistance contributes to institutional development by:

- Strengthening the skills of the MPT's technical teams for mobility and urban transport measures management. This has allowed the new institutional capacities installation, which will contribute to improving the management processes of public transport services.
- Redesigning the institutional structure, establishing areas, functions, and responsibilities for promoting and managing the city's urban mobility with a focus on sustainability and gender equality.
- Establishing coordination models between national and local public agencies within the transport sector, and local coordination spaces between relevant stakeholders in the city, such as the aforementioned COMUS.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** German Federal Ministry for Economic Cooperation and Development (BMZ)

**Funding amount:** EUR 1,215,000[1]

**Implemented by:** GIZ through the Sustainable Urban Mobility in Secondary Cities in Peru (DKTI)

**Local counterpart:** Ministry of Transport and Communications (MTC), through the National Program for Sustainable Urban Mobility (Promovilidad), and selected local governments

1 The total funding amount of the technical assistance is EUR 7,300,000. However, the DKTI programme supports six cities in Peru. This number assumes an even allocation of funds among Trujillo, Arequipa, Piura, Cusco, Huamanga and Chiclayo.

**Supported activities:**

- Establishment and strengthening of the National Program for Sustainable Urban Mobility (locally known as Promovilidad) through support for MTC
- Establishment of coordination mechanisms at city level (e.g., stakeholder dialogue) and with local governments and ministries
- Strengthening urban planning and implementation capacity of local governments
- Promotion of exchanges on innovative technologies, methods and financing mechanisms

# Status of implementation

**Project start:** 2017

**Expected project completion:** March 2022

Completed outputs:

- The Management Unit (UGP) of the National Program for Sustainable Urban Mobility (PROMOVILIDAD) is in operation. Coordination between actors at the national and subnational levels in the planning and implementation of investment measures and projects has improved.
- Improved coordination mechanisms within cities (among relevant stakeholders) as well as between local governments and ministries.
- Increased capacity of cities for implementation of measures: municipalities apply technical and institutional capacities in the planning and implementation of sustainable urban mobility measures.
- Innovative technology, methods, and financial mechanisms: Transport managers and planners are aware of proven innovative technologies, methods, and financing concepts for sustainable mobility.

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost Estimate[2] |
|---|---|
| Sub-programme for universal accessibility and elimination of architectural barriers at intersections in Trujillo's historical city centre | EUR 509,499.14 |
| Programme for the maintenance, improvement and enlargement of the walking surface of Trujillo's metropolitan area | EUR 1,267,787.80 |
| Sub-programme for the implementation of a core network of bicycle paths. | EUR 2,157,703.36 |
| Final phase structuring of the North-South Core Corridor project in the framework of the Integrated Public Transport System | EUR 7,037,296.13 |
| Implementation and operation of the Integrated Public Transport System with a final route regulation plan | EUR 86,178,645.76 |
| Network of Integrated Public Transport System bus stops on feeder corridors | EUR 14,109,206.86 |
| Integral sub-programme for the optimisation and extension of the traffic light network in the metropolitan area | EUR 6,270,758.60 |

2 Trujillo's SUMP was originally budgeted in PEN. For this factsheet the costs were converted into EUR using InforEuro currency exchange rate. At the time of the conversion, 1 EUR = 4.516 PEN. This applies to all EUR amounts in the document.

# Finance leverage

| Financing resulting from the SUMP | Source | Amount |
|---|---|---|
| Implementation of sustainable non-motorized transport systems (pop-up cycle lanes) | Ministry of Transport and Communications (MTC) | EUR 404,532.27 |
| Investment project: construction of north-south corridor and complementary roads | KFW | EUR 60 million |

| Associated financing supporting measures in the SUMP | Source | Amount |
|---|---|---|
| Pilot project "Promotion of the recovery of public space and the use of non-motorized transport - Muévete Trujillo, Trujillo, Peru" | TUMI | EUR 73,660.88 |

# Projected impacts

| Indicator | Impact 2030 (SUMP vs BAU) | Baseline - 2017 | Projected 2030 BAU | Projected 2030 SUMP scenario |
|---|---|---|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | -423,36 t $CO_2$eq | 376,677 t $CO_2$eq | 767, 487 Tn de $CO_2$ t $CO_2$eq | 355,132 t $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | Impact not quantified | 391.41 kg $CO_2$eq / capita | Impact not quantified | Impact not quantified |
| **Air pollution**<br>Decrease in mean urban air pollution of particulate matter (in µg PM10) at road-based monitoring stations | Impact not quantified | 59.67 µg/m³ of PM10 | Impact not quantified | Impact not quantified |
| **Modal share**<br>Increase of the modal shares of trips by public transport, walking and cycling | Public transport: +17.4%<br>Walking: +11%<br>Cycling: +3.2%<br>Private cars: -3.7%<br>Taxis: -14.3%<br>Collective cabs: -9.6%<br>**TOTAL: +22%** | Public transport: 31.2%<br>Walking: 18.4%<br>Cycling: 1.1%<br>Private cars: 15.5%<br>Taxis: 25.4%<br>Collective cabs: 8.4%<br>**TOTAL sustainable transport: 58%** | Public transport: 27.6%<br>Walking: 14%<br>Cycling: 0.8%<br>Private cars: 18.7%<br>Taxis: 29.3%<br>Collective cabs: 9.6%<br>**TOTAL: 52%** | Public transport: 45%<br>Walking: 25%<br>Cycling: 4%<br>Private cars: 11%<br>Taxis: 15%<br>Collective cabs: 00%<br>**TOTAL: 74%** |
| **Road safety**<br>Decrease of traffic fatalities in the urban area, per 100.000 inhabitants | -4.4 fatalities/100,000 hab | 7.3 fatalities/100,000 hab | 9.9 fatalities/100,000 hab | 5 fatalities/100,000 hab |

# Highlights

## Implementation of the recently adopted SUMP has started through interinstitutional coordination bodies

To continue with efforts to strengthen the SUMP locally, one of the main tasks for 2021 was to institutionalise the SUMP as a territorial planning instrument. Trujillo's SUMP focuses on the metropolitan area of the city and has a time frame until 2030 for its implementation. After it was approved by the City Council in April 2021, Trujillo became the first Peruvian city to develop and institutionalise a SUMP.

Currently, Transportes Metropolitanos de Trujillo (TMT) is responsible for the coordination of the COMUS' Technical Management Unit, in which 3 other areas of the municipality participate. This Unit is responsible for organising and overseeing the progressive implementation of the SUMP. Therefore, it is in charge of seeking funding through national government entities such as the Ministry of Economy and Finance (MEF), the Ministry of Transport and Communications (MTC), the Ministry of Housing, Construction and Sanitation (MVCS), the Ministry of Environment (MINAM); and at local level through the Regional Government of La Libertad as well as public, private and cooperation organisations. The implementation process started by establishing a roadmap, mapping critical actions and measures, and clarifying responsibilities to monitor progress within the technical team to ensure an orderly and prioritised progress in the SUMP.

There is still a long road ahead in terms of implementation, but both Trujillo's Municipality and TMT are committed to face the challenges to come in the road to transform their mobility, such as those related to raising the required amounts (both from public and private funds) to fully achieve the SUMP's goal.

## Communication products helped to make the SUMP more approachable for citizens and raise awareness on sustainable mobility

During the first quarter of the year, communication strategies were implemented to improve the understanding of the plan among the largest number of civil society stakeholders. Given the context of the pandemic, digital media and social networks were used to make the SUMP more understandable; digital documents were produced with key messages and short videos explaining the importance of having a clear vision of the city with a focus on sustainable mobility and urban transport, the need for this type of planning instrument and its benefits on the creation of a city on a human scale and with environmental commitment.

These communication actions were followed by a series of awareness-raising workshops to clear up doubts about the SUMP and clarify its content and proposals. Local representatives and a number of citizens participated in each workshop, held by local authorities. The last workshop of the series gathered representatives from central government institutions, such as the Ministry of Transport and Communications (MTC), the Ministry of Housing, Construction and Sanitation (MVCS), as well as regional and local authorities.

## Urban mobility planning with a participatory approach allows ownership and engagement

As the SUMP planning cycle contains different actions and steps to be undertaken during the SUMP formulation, there is a need to conceive a strategy for participation and communication, so the interests of the diverse stakeholders are considered in the early stages of the project. Participation and effective communication enable the adequate convergence of objectives regarding urban mobility when formulating the SUMP. The trust built and the constant dialogue between public authorities and citizens contribute to consolidating further phases, such as implementation.

Specifically, based on Trujillo's experience, a guideline for strategic communication and citizenship participation during the design and implementation of SUMPs in Peru was formulated. This guideline proposes orienting principles to facilitate the SUMP planning and implementation processes beyond mere diffusion and dissemination campaigns or regular one-direction presentations. The viability and success of the SUMP depend on how much its evolution is related to citizenship demands and perspectives.

# Córdoba, Argentina

Partner country

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 576 km$^2$

Population: 1,600,000 | Growth rate: +0.4%

Type of city: Region capital city

GDP per capita: USD 12,000

Modal Share:

- Formal public transport: 32.2%
- Walking: 27.2%
- Cycling: 2.6%
- Private cars: 26.1%
- Private motorbikes or 2-wheelers: 5.8%
- Taxis: 5%
- Other: 0.3%

National GHG emissions per capita: 8.35 ($tCO_2eq$)

Exposure to climate change: HIGH

## Context

The City of Córdoba is the capital of the Province of Córdoba and is in the centre of the territory. It is positioned in the foothills of Sierras Chicas and crossed by the Suquía river and by the La Cañada stream. The singular topography, characterized by terraces, makes it particularly challenging to implement and develop a good mobility system and infrastructure.

Córdoba has an urban area of 576 km² and an estimated population of 1,600,000 inhabitants, which makes it the second-largest city in the country after Buenos Aires. 83% of the population of the Metropolitan Area of Córdoba lives in the city of Córdoba.

The economy of the Province of Córdoba is based on services and technological activities (64% of the gross geographic product - GGP), the automotive industry (26.5% of GGP) and the primary sector (9.5% of GGP).

The city is organized by radio centric system which generates challenges for urban and mobility planning. Its population density is low (63 inhabitants/km²). However, there are sectors with a high density that do not receive basic transport services. This imbalance has existed for the last 50 years.

In the metropolitan area of Córdoba, there are 2,556,906 motorised and non-motorised trips made each day. 85.4% of these trips originate or/and end in the capital city, which reveals the importance of the city within the metropolitan area. Trips are made by 74.7% of the population, which shows a relatively high mobility rate (2.47 trips per working day) when considering the group of people who make at least one trip per day. If the entire population is taken into account, this

average drops to 1.84 trips per person per working day. Motorised modes are predominant (69.9%). In the last years, a series of actions have been encouraging the growth of individual mobility to the detriment of mass transport.

A mass transit system is in place with bus and trolleybus operated by three private firms and a public one. 70 lines compose the system, with 8 central corridors, 2 circle lines, 3 trolleybus lines, 6 district lines and 1 airport line.

There is an existing transport master plan, which was approved in 2014 and financed by CAF (Development Bank of Latin America). Its main objectives included the promotion of mass transit, the development of non-motorised transport, the promotion of the rational use of private motorised transport, the generation of new travel patterns that allow for more efficient use of the network infrastructure, greater road safety and the preservation of the environment. This master plan needs to be updated and consolidated to be validated by institutional actors as well as the community.

The *Municipalidad de Córdoba*, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It has the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban matters.

The technical assistance contributes to institutional strengthening by: Facilitate spaces for exchange between the different areas of the municipality and discussions to have a common vision of mobility in the city.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Union

**Funding amount:** EUR 600,000

**Implemented by:** AFD through the EC+ Program

**Local counterpart:** Municipalidad de Córdoba

**Supported activities:**

- SUMP for Córdoba
- Updated origin / destination survey
- Study of the city's central area to propose structuring actions for the transformation into a low-emissions area
- Prediction model of current and future mobility scenarios, including short, medium, and long-term strategies
- Technical document on mitigation and emissions reduction of SUMP implementation

# Status of implementation

**Project start:** 2021 Q2

**Expected project completion:** 2023 Q1

**Completed outputs:**

- Finalization preliminary inform
- Forum 1

**Next expected outputs**

- Diagnosis and evaluation
- Definition of a vision, strategic objectives and scenario building
- Action plan, budget and funding
- Monitoring, reporting and accompanying implementation

# Core impact indicators baselines

| Indicator | Baseline – 2019-2022 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 0,376,655 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 282.9 kg $CO_2$eq / capita |
| **Access to public transport**<br>Proportion of the population living 500 meters or less of a public transport stop | 96% |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 7.21 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 4.2 fatalities / 100,000 hab |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | 15.3% |

# Highlights in the past year

The consulting firm SAFEGE/DVDH/TRANSAMO was selected. The contract started in April and is currently in the diagnostic phase. Forum 1 was held in person, attended by people from various sectors of the city.

# La Paz, Bolivia

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 3,152 km$^2$

Population: 951,800 (2019) | Growth rate: 0.7%

GDP per capita: USD 3,143.0 (2020)

Modal Share

- Public transport (formal and informal): 79,18%
- Walking: 11,92%
- Cycling: 0,04%
- Private vehicles (cars, motorbikes): 6,75%
- Other (freight vehicles, taxis): 2,11%

National GHG emissions per capita: 1,77 ($tCO_2eq$) (2020)

Exposure to climate change: HIGH

*Country capital city*

## Context

La Paz is the economic and administrative capital of Bolivia, and with an elevation of roughly 3,650 m is the highest capital city in the world. Its metropolitan area includes the even higher city of El Alto with an average elevation of 4,000 m. Both cities are connected via one of the biggest cable car networks in the world but are not integrated from an administrative standpoint. The metropolitan area of La Paz-El Alto has a population of about 2 million inhabitants, of which approximately 950,000 live in La Paz.

The Municipality of La Paz (the counterpart for this project) has the mandate and responsibility to finance mass public transport infrastructure. International finance sources can lend money to the counterpart by agreeing on a sovereign loan with the national government, who then retrocedes it to the municipal government. Systems and procedures are partially in place to monitor, evaluate and report on urban mobility.

In 2014, the city inaugurated the country's first real public transport system: a structural network of buses named Puma Katari that travel along the main arteries observing fixed stops. This is a remarkable innovation compared to the pre-existing "micro" buses stopping on demand and operating at a low commercial speed. The cable car network, called Mi Teleferico, also functioning since 2014, is composed of 11 lines that transport about 250,000 to 300,000 passengers daily (2019). Four new lines will be operating by 2025 according to the network's expansion plan.

Compared to other modes, cycling is nearly invisible (0.04%) in the modal split, with less than a thousand trips made daily by bicycle. The city of La Paz is topographically challenging for cyclists, with steep slopes and an altitude variation of 600 m from the lowest to the highest point of the city. The development strategy of the cycling infrastructure focuses on the implementation of micro-networks connected through the collective transport systems – Cable Car and Puma Katari. These micro-networks will be located in neighbourhoods whose slope allows connections in order to cover trips for shopping, work or entertainment.

The objective of the pilot project is to design and construct a pilot micro-network in the Southern Macro District of the municipality of La Paz proposing an intermodal connection, promoting the use of bicycles in urban mobility.

# Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** European Union through the EUROCLIMA+ programme

**Funding amount:** EUR 500,000

**Implemented by:** AFD through EUROCLIMA+

**Local counterpart:** Autonomous Government of the Municipality of La Paz (GAMLP)

**Supported activities:**

- Initiation: report on the design and budget for the cycle path proposed by GAMLP.
- Preparation: preparation of bid tender documents for the works, support in the design of the communication campaign for the launch of the bicycle infrastructure.
- Training: 20-hour course and study tour on cycling infrastructure for GAMLP staff.
- Diagnostic: report on the site supervision strategy for cycling infrastructure projects, business model for a public bicycle system.
- Implementation: construction of Phase I of the cycling path, technical support during implementation.

# Status of implementation

**Project start:** 2022 Q1

**Expected project completion:** 2023 Q2

**Completed outputs:**

- Bid tender documents for technical assistance contract

**Next expected outputs**

- Support the design of the communication campaign to launch the project, in addition to covering the costs of dissemination
- Analyse the design and budget of the cycling-infrastructure proposed by the SMM-GAMLP technical team and make recommendations for improvements and additions to optimise its operation and cost based on best international practices
- Advise the technical team of SMM-GAMLP in the integrated planning of the Cycle-infrastructure Network for the Southern Macro District of the municipality of La Paz, Phase I (Calacoto and San Miguel areas) and during its construction

# Highlights

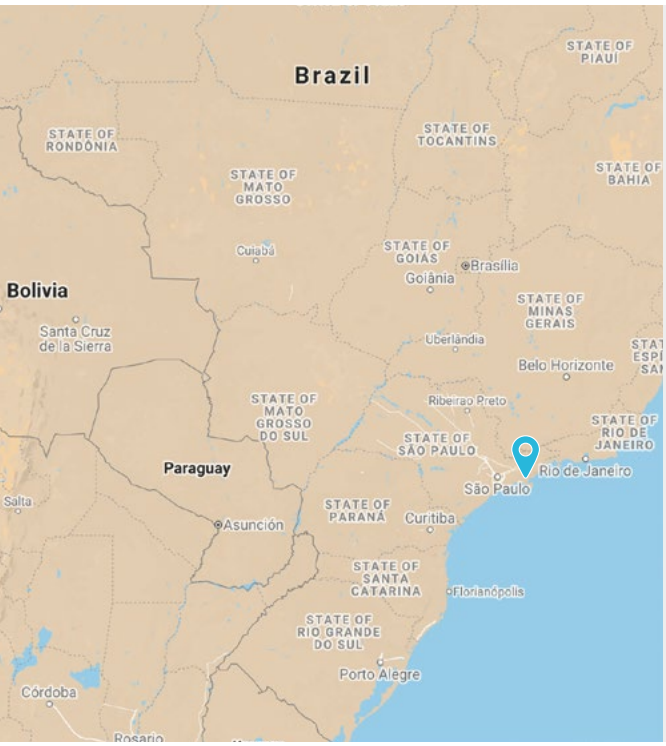
## Capacity building and infrastructure implementation interact to encourage cycling

This pilot project aims to test the development model of micro-networks of cycling infrastructure in certain neighbourhoods proposed by the Municipality. It will train technical teams, produce ground-knowledge for future projects, and provide the necessary tools for the completion of the integrated cycling strategy in La Paz.

# Baixada Santista, Brazil

Partner city

Status of the project: ongoing technical assistance




## Basic Information

Antofagasta urban area: 2,422 km$^2$

Population: 1,892,314 | Growth rate: +1.24%

GDP per capita: USD 16,771

Modal Share

- Formal public transport: 30%
- Walking: 32%
- Cycling: 15%
- Private cars: 16%
- Private motorbikes or 2-wheelers: 4%

National GHG emissions per capita: 5.12 ($tCO_2eq$)

Exposure to climate change: MEDIUM

*Region capital city*

## Context

The Metropolitan Region of Baixada Santista (RMBS), established in 1996, was formed by the grouping nine municipalities: Bertioga, Cubatão, Guarujá, Itanhaém, Mongaguá, Peruíbe, Praia Grande, Santos and São Vicente. Despite corresponding to less than 1% of the surface of the State of São Paulo, the region accounts for approximately 4% of the population of the state of São Paolo. It also represents the 4% of the state GDP and is recognized as one of the most important metropolitan regions of Brazil due to its important harbor and strong industrial and tourist sectors.

Across RMBS 185,247 people travel daily, 13.38% of them to the Metropolitan Region of São Paulo (RMSP) and 77.95% within RMBS. The current road, sea and rail accesses to the port complex significantly limit the potential for cargo movement expansion, which is projected in an expansion Master Plan. A specificity of the region is the seasonality of tourism activities which highly impacts the transport system.

Today there are approximately 230,000 vehicles registered at RMBS and the private vehicle fleet is expanding at a faster rate than the population growth. The metropolitan roads serve the metropolitan bus transportation, operated by São Paulo's Metropolitan Company of Urban Transport (EMTU), but are often poorly integrated with the Light Rail Transit System (VLT) and the intermunicipal buses. Approximately 11% of regional travel is made by bicycle, but with low integration with other modes. Most of the metropolitan routes that belong to the municipalities are not equipped with bicycle lanes. The RMBS currently has about 220 km of bike lanes and cycle paths in place.

There is no transport master plan or similar document for the metropolitan region, although some of the municipalities have their own transport master plans. Baixada Santista Metropolitan Agency (AGEM) does not have the mandate and responsibility to finance mass public transport infrastructure. Instead, the Government of the State of São Paulo acts directly in the region, especially on the issue of mobility, through the Secretariat of Metropolitan Transport (STM), the Secretariat of Logistics and Transport (SLT), and the Metropolitan Company of Urban Transport (EMTU). The state

government has the authority to borrow from international finance sources. Some systems and procedures are partially in place to monitor, evaluate and report on urban matters.

Baixada Santista is receiving technical assistance to develop a regional urban mobility and logistics plan for the region aiming at guiding actions and investments for the short, medium, and long-term. The new plan should allow to expand and integrate different modes of passenger transport. Its goal is improving traffic flows and decreasing travel times. The modal share of public transport and bicycles should both rise.

The technical assistance will also contribute to strengthening institutions by providing general guidelines and proposals for integrated transport solutions, containing a complete diagnosis of current mobility conditions and a prognosis of the evolution of these conditions. It will allow to propose actions that streamline the mobility system and present alternatives that maximize the potential for sustainability of each mode of transport, to achieve adequate standards for the movement of people and loads in the region. Finally, it will help establish a Monitoring and Evaluation System (SIMA) with a set of sustainable mobility and logistics indicators providing constant information for the Thematic Chamber of Mobility to monitor the outcome of the proposed actions, thus contributing to the integrated management cycle of the region.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Commission

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the EUROCLIMA+ Program

**Local counterpart:** Baixada Santista Metropolitan Agency (AGEM)

**Supported activities:**

- Preparation of a Regional Urban Mobility and Logistics Plan for Baixada Santista, which guides actions and investments for the short (2022), medium (2026) and long-term (to 2030).
- Mobility diagnosis (Data collection, inventory and evaluation)
- Definition of vision, objectives and strategies of SUMP
- Action and Financing Plan for SUMP implementation
- Participatory approaches and processes
- Monitoring and formal reception of PRMSL-BS and accompaniment to implementation

# Status of implementation

**Project start:** Q2 2021

**Expected project completion:** Q4 2022

**Completed outputs:**

- Start project
- Phase 0: Preliminary inform

**Next expected outputs**

Formulating the SUMP with this products:

- Phase 1: Diagnosis
- Phase 2: Definition of vision, objectives and strategies
- Phase 3: Action and financing plan
- Phase 4: Participatory approaches and processes
- Phase 5Monitoring and formal reception of PRMSL-BS

# Core impact indicators baselines

| Indicator | Baseline - 2019 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 38.87 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 34. 367 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 7.5 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 9.5 fatalities / 100,000 hab[1] |

# Highlights

## The SUMP preparation started off in earnest with many diverse stakeholders involved

Start of the formulation of the SUMP of Baixada Santista. The consulting firm delivered the preliminary report. During the diagnostic phase, almost 18 focus groups with key actors have been conducted, all virtually. Having a gender expert in the project allows for greater participation of this population and greater gender equity.The phase 0 or preparatory phase for COVID-19 will allow the implementation of a methodology for data collection and event organisation that is more appropriate to the current situation.

1 Baseline 2021

# Belo Horizonte, Brazil

Partner country

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 14,420 km$^2$

Population: 5,700,000 | Growth rate: 1.05%

GDP per capita: USD 17,239

Modal Share

- Formal public transport: 28.1%
- Walking: 34.8%
- Cycling: 0.4%
- Private cars: 36.6%

National GHG emissions per capita: 5.12 ($tCO_2eq$)

*Region capital city*

## Context

Belo Horizonte is the capital of the state of Minas Gerais and located in the south-eastern region of Brazil. It is the third-largest metropolitan area in the country and has a population of over 2.4 million, with 5.7 million in the official Metropolitan Area (IBGE, 2014). Considering the rather moderate ambition level of Brazil's NDC, local action in cities play a crucial role for climate change mitigation. Belo Horizonte is one example of an active mid-sized city committed to sustainable development.

In its NDC, Brazil commits to reduce greenhouse gas emissions by 37% below 2005 levels by 2025. The NDC also contains a subsequent indicative contribution to reduce greenhouse gas emissions by 43% below 2005 levels in 2030. Compared to the 1990 level this translates to 6% respectively 16% reduction. With this target Brazil is the first major developing country to commit to an absolute GHG reduction below 1990 levels.

Belo Horizonte has a series of plans (Master Plan, PlanMob-BH, Belo Horizonte – a Smart City, etc.) and policies in place that are reviewed and monitored on a regular basis to help guide the urban development of the city. Belo Horizonte has already made important progress towards sustainability and in the medium and long run Belo Horizonte envisions becoming an example of smart and sustainable urban development for Brazil and Latin America. However, road transport remains responsible for 53% of greenhouse gas emissions in Belo Horizonte and could reach 6 million tons of $CO_2$ emissions by 2030. With regard to mobility, Belo Horizonte already has an innovative Sustainable Urban Mobility Plan (2010, reviewed in 2016), called PlanMob-BH, with comprehensive measures related to eight strategic areas: (1) active mobility, (2) collective mobility, (3) motorized individual mobility, (4) traffic calming and circulation, (5) urban logistics, (6) sustainable city, (7) universal accessibility, and (8) management, supervision and operation. Each strategic intervention is complemented by actions and indicators for short (2020), medium (2025) and long-term (2030) planning horizons.

Since 2017 Urban Pathways has been supporting Belo Horizonte in the implementation of active mobility projects. For this, Urban Pathways has invited the city to participate in several international fora, training and peer-to-peer learning. Moreover, Urban Pathways has provided technical assistance in the development of project proposals to be submitted to

donors. As a result, in 2019 Belo Horizonte implemented four "Zones 30", one of which counted with the support of Urban Pathways from conceptualization to financing, the Zone 30 Confisco. The successful implementation of Zones 30 in Belo Horizonte has led to a great acceptance from citizens and political support.

The Zone 30 pilot-project foresees a wide deployment of vertical and horizontal signalling, reallocation and repositioning of parking spaces to provide the reduction of the speed, and enlargement of sidewalks with the creation of small areas of coexistence for pedestrians with the insertion of urban furniture. Beyond the immediate mobility related issues, Belo Horizonte also recognises these measures as an opportunity to revitalise the downtown area and enhance the quality of life by creating pedestrian streets and giving the space used for cars back to the people.

In terms of capacity building, Urban Pathways involved Belo Horizonte in webinars on e-scooters, tactical urbanism, public space interventions, AQ sensors, etc. Urban Pathways also supported the participation of Belo Horizonte in the Transport and Climate Change Week 2018 and 2022 (Berlin), Sustainable Urban Infrastructure Forum (Quito), International Conference on Climate Action 2019 - ICCA (Heidelberg), a site visit to Santiago de Chile (2020), among others. Thus, Urban Pathways would like to continue supporting Belo Horizonte in the development of active mobility projects, awareness raising and cross-sectorial integration related to climate change mitigation.

# Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** BMUV through the International Climate Initiative (IKI), WRI Brasil, TUMI

**Funding amount:** EUR 100,000

**Implemented by:** Wuppertal Institute and UN-Habitat through the project Urban Pathways

**Local counterpart:** Belo Horizonte Transport and Traffic Company (BH-TRANS)

**Supported Activities:**

- Pilot project financing and implementation
- Capacity building, training and participation in international fora
- Assistance in the development of project proposals for donors

# Status of implementation

**Project start:** 2017

**Expected project completion:** 2022

**Completed outputs:**

- Pilot project implementation of Zone 30 in Confisco neighbourhood
- Pilot project implementation of EcoZone in Santa Tereza neighborhood
- Capacity building and webinars on e-scooters, tactical urbanism, public space interventions, AQ sensors

# Highlights

## Community involvement and stakeholder participation is key for implementation success

Understanding that the transition to a sustainable urban development is not only about infrastructure, but that a mindset change plays a huge role, and the involvement of the community in these projects is key. The pilot projects in Belo Horizonte worked with participatory methodologies to increase support for sustainable mobility modes, transform public spaces, promote clean streets and waste reduction and separation. Their approach seeks to empower neighbours to have an impact in the change in their community, raise awareness and increase the collective knowledge on sustainable urban development and environmental issues.

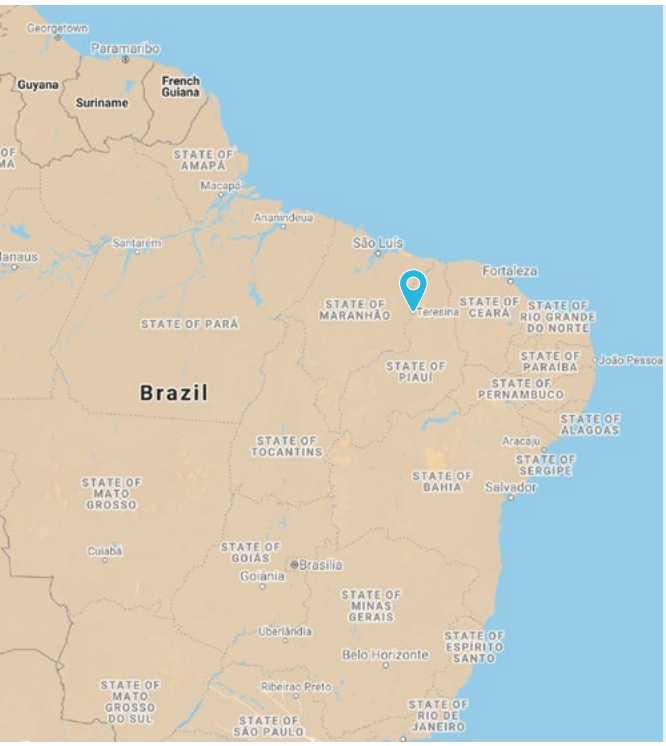
## Introduction of EcoZones: new ideas, new approaches

The "EcoZona" intervention is an evolving concept put together by the Urban Pathways (UP) team, that supports small, low-cost projects that focus on neighbourhoods as the geographical scale. An intersectoral approach is applied, addressing simultaneously mobility and waste issues through a series of activities that include tactical urbanism, awareness-raising, community participation and impact assessment. The development of a pilot EcoZone that merges the concepts of Low-Emission Zone (LEZ) and Zero Waste could become a precedent for Belo Horizonte that could easily be replicated in other areas of the city and thus contribute significantly to GHG emissions reductions from the transport and waste sectors.

# Teresina, Brazil

Partner city

Status of the project: **ongoing technical assistance**




## Basic Information

Urban area: **1,392 km$^2$**

Population: **1,203,922** | Growth rate: **1.21%**

Type of city: **Region capital city**

GDP per capita: **USD 6,729**

Modal Share

- **Formal public transport: 21.3%**
- **Walking: 32.6%**
- **Cycling: 11.8%**
- **Private cars: 24.8%**
- **Private motorbikes or 2-wheelers: 5.8%**

National GHG emissions per capita: **5.12 ($tCO_2eq$)**

Exposure to climate change: **MEDIUM**

## Context

Teresina is a low-density agglomeration of 1.2 million inhabitants, located in the north-east of Brazil. The city is located at a crossroads near major cities of the north coast of the country, notably Fortaleza and Sao Luis, which contributes significantly to its economic development. However, the city suffers from urban sprawl, which increases travel time, costs and reduces the efficiency of public transport.

The 2008 Master Plan for Transport and Urban Mobility states that 1.91 million trips are made per day in the greater Teresina, standing out on foot (32.6%), followed by private car trips (24.8%), and municipal public transport (21.3%), with less representation, bicycle (11.8%) and motorcycles (5.8%). Therelatively low share of public transport illustrates existing issues related to efficiency, accessibility and affordability of public transportaccessibility but also affordability issues. Public transport in Teresina is currently provided by about 100 bus lines, as well as a BRT system under development. This network is operated by 4 main companies with a total fleet of 550 vehicles. This network is supplemented by 8 alternative service routes, operated by 45 vehicles from minor operators organized under the SINTRAPI (Alternative Passenger Transport Operators Union).

During the last year, the current "conventional" bus system) has gradually been replaced by the new Integrated BRT System. This evolution redesigns the bus routes, previously classified into (i) radial, (ii) circular, and (iii) *diametrais* (from one side of the city to the other, going through the city center) all converging to the Central Business District, and leading to overlapping itineraries and a saturation of some segments in the system.

The Integrated BRT System introduces a new feeder-trunk system, operating with a set of feeder lines the connects neighborhoods to zone terminal, and trunk lines (BRT) departing from terminals to city center or linking terminals. It divides the city in 4 main zones (South, Southeast, East, Center-North -Teresina doesn't have West zone inside the municipal jurisdiction), each zone with 2 bus terminals, and the CBD has 4 unloading terminals. The bus route concession was allocated by zone, and each operator holds the concession for the set of routes of a zone.

Teresina Municipality Town Hall, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It has authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

The project supported by the MobiliseYourCity partnership implements an Open Innovation approach which aims at (i) identifying the key issues of the transport system management and (ii) developing relevant digital solutions that can address those issues and scale up strategy.

The specific objectives of the Project are to:

- Provide a rapid assessment of the current public transportation system of Teresina;
- Co-identify and prioritise the main issues faced by the public transportation system;
- Identify solutions and technologies which could address those prioritised issues, including blockchain;
- Provide methodology and resources to prototype pilot projects;
- Lesson learned from the pilots, documentation and definition of the pilot implementation strategy.

The technical assistance contributes to institutional strengthening by tackling trust issues between all the stakeholders of the mobility sector through data and technological solutions.

# Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** EUROCLIMA+

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the project

**Local counterpart:** Teresina Municipality Town Hall, Secretary of Planning and Coordination (SEMPLAN)

**Supported activities:**

- Install the blockchain platform and promote its use by the actors involved in the Teresina transport system
- Implement a public transport governance system based on co-management and the opening of data and processes whereby the municipality, companies, users and the treasury interact in a collaborative way

# Status of implementation

**Project start:** Q4 2019

**Expected project completion:** Q1 2022

**Completed outputs:**

- Signature of a MoU between Teresina and AFD
- Finalization Diagnosis
- Finalization Setup of The Open Innovation
- Finalization Pilot Conception
- Finalization Proof of concept

**Next expected outputs**

- Scale-up strategy

# Core impact indicators baselines

| Indicator | Baseline - 2020 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)(Brazil)** | 1,070.08 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)(Brazil)** | 5,120 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 13 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 22.8 fatalities / 100,000 hab |

# Highlights

## Efficient data analysis of public transport reduces information inconsistencies and enables service improvement

Inefficient data management and analysis in Teresina's transport system made it very difficult to implement traffic reorganization policies, due to information inconsistencies among different stakeholders preventing collaboration to adjust to their diverse interests. The pilot project aims at optimizing the infrastructure built for the BRT system through an information system that improves decision-making and reduces information inconsistencies between the different Teresina public transport system's stakeholders. The use of this platform is also intended to improve the levels of traffic norms infringement of private companies in terms of fines and infractions committed, in addition to providing better traceability of the process.

## Despite the pandemic bringing challenges to the project, participants successfully adapted to the new conditions

The project was impacted by the COVID-19 pandemic, causing a change in diagnostic methodologies (workshops that were face-to-face became virtual), the availability of the mayor's office team was greatly reduced, and public transport went into crisis with the drop in demand, which generated more problems of trust with operators and citizens. However, over the course of the months, the public, the consulting firm and the operators began to adapt to the change brought about by the pandemic. An example of this is the participation of more than 14 teams in the #MOVETERESINA challenge to create the platform prototype, for the open innovation methodology. The three proof-of-concept solutions can be replicated in other cities.

## Three teams were chosen as a result of the open innovation challenge

The #moveteresina challenge was held in March and three projects were selected to enter the proof-of-concept (prototype) development phase. The selected teams (Jaegers, Prontuário do Busão and OpTIME) proposed the following projects:

- Development of a data visualisation software, based on public databases, to help citizens understand the challenges related to mobility and propose solutions
- Digitalisation of existing processes within the companies operating the bus lines, and development of dashboard performance indicators for decision support
- Development of a software for better planning of bus routes

# Chile

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Population: 18,050,000 (2018) | Growth rate: 1.4%

Percentage of urban population: 87.8%

GDP per capita: USD 16,522

Percentage of the population living below the national poverty lines: 10.9%

Annual average infrastructure expenditures as percentage of GDP: 2.2% (source: Consejo de Políticas de Infraestructura)

Nationally Determined Contribution (NDC)[1]:

- 100% e-taxis by 2050.
- 100% urban public transport e-buses by 2040
- 58% private e-vehicles by 2050
- 58% commercial e-vehicles by 2050

National GHG emissions per capita: 5.1 ($tCO_2eq$)

Proportion of transport related GHG emissions: 24.1% (2016)

Exposure to climate change: HIGH

## Context

The Republic of Chile is a country in South America. It occupies a long, narrow strip of land between the Andes to the east and the Pacific Ocean to the west. Chile covers an area of 756,096 km² (291,930 sq mi) and has a population of 18 million as of 2018. The capital and largest city is Santiago.

Chile has an economy characterized by the exploitation and export of raw materials. In 2012, exports - copper, fruit, fishery products, paper and cellulose pulp, chemicals, and wine - reached USD 83.66 billion, while imports - oil and derived products, chemicals, electrical and telecommunications articles, machinery industrial vehicles and natural gas- reached 72,200 million dollars. On the other hand, the public debt was estimated at 10.1% of the GDP, of which the external debt amounted to USD 102.1 billion at the end of 2012. The GDP grew by 10.5% in 2021 (after a reduction of approximately 6% by 2020) and is estimated to grow by 2,5% in 2022.

By 2030, $CO_2e$ emissions from the transport sector are expected to increase by 36% compared to 2007, reaching the value of 46.4 megatons $CO_2e$. This trajectory is currently strongly correlated with GDP growth, and the business-as-usual projections for 2050 go from 44.5 megatons $CO_2e$ for low GDP growth projections to 84.4 megatons $CO_2e$ for high GDP growth projections.

1 These measures are not explicit in the NDC commitments, but modelled as part of the proposed carbon neutrality scenario.

The Ministry of Transport and Telecommunications (MTT) is in charge of the development of transport in Chile. Every 10 years approximately, it develops transport plans for the main cities of the country, in addition to managing public transport contracts, administering the subsidies to public transport, among other responsibilities.

Due to a highly centralised system, Chilean cities have very few competencies for planning sustainable urban mobility. However, as of 2021, due to a new decentralization law, cities will receive new powers in this area. Since October 2019, Chile has been subject to a deep social and political crisis, which has led to a referendum for the replacement of the current constitution. This may generate further changes to the current political structure of the country.

Even though Chile has pushed for the electrification of public transport, the country shows high levels of inequality in terms of development between the capital Santiago and the rest of the cities. Indeed, public transport is still informal in several cities and does not meet the same qualitative and quantitative standards as in the capital.

The implementation of a National Urban Mobility Policy (NUMP) aims to support cities in the development of sustainable urban mobility, either through the establishment of multisectoral political guidelines (strategy) or the facilitation of a financing programme, in addition to supporting commitments of the NDC and the country's Long-Term Strategy.

Technical assistance for the development of the NUMP has strengthened the institutional framework in the country mainly through the facilitation of dialogue and agreements from a multisectoral (dialogue between the transport sector, urban planning, environment, and energy) and multilevel (dialogue between the regional and local levels) perspective.

## Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Programme (NUMP)

**Type of NUMP:** Mixed Programme and Policy NUMP

**Funded by:** European Commission

**Funding amount:** EUR 1,000,000

**Implemented by:** GIZ through the Euroclima+ Programme

**Local counterpart:** Ministry of Transportation and Communications

**Main purpose of the NUMP:**

- Offer cities and regions a general enabling framework for SUMPs
- Provide technical guidance on a wide range of technical issues relevant for the transport sector in the context of reducing GHG emissions

**Supported activities:**

- Design of a National Programme for Sustainable Mobility
- Elaboration of the Strategy for Sustainable Urban Mobility (writing, revising, promoting the participation of other institutions in the process)
- Various NUMP Chile roundtable meetings and strategical planning of the NUMP activities
- Virtual peer-to-peer workshops (with Brazil, Ecuador, and Uruguay) and internal workshops with several MTT departments
- Development of technical studies relevant in the context of the Chilean Long-Term Strategy on fighting climate change (Emissions Inventory, Emissions Projection, Status Quo Analysis, among others)

# Status of implementation

**Project start:** Q4 2018

**Project completion:** Q4 2022

**Completed outputs:**

- NUMP Workshops in Quito, Ecuador and Bogota, Colombia (March 2019 and February 2020)
- Status quo analysis and series of multisectoral workshops for building a common understanding of the urban mobility situation, including mobility challenges and current actions being implemented by 7 sectoral ministries.
- Internal round of 3 workshops (Nov-Dec 2020) with the participation of representatives of most departments (regional and national) from the Ministry of Transport and Telecommunication (MTT) to define the objectives and action lines of the National Strategy on Sustainable Urban Mobility (134 participants in total)
- National Strategy for Sustainable Mobility (2021)
- Study in emissions Inventory from the transport sector (2020)
- Study on emissions projections from the transport sector (2021)

**Next expected outputs**

- Investment Programme to support the implementation of sustainable mobility measures from subnational governments (expected Q4 2022)
- MRV process at a national level (expected Q2 2022)

# Projected impacts

| Indicator | Baseline - 2018 |
|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | 13.1 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 853 kg $CO_2$eq / capita |
| **Access**<br>Increase of the proportion of the population living 500 meters or less of a public transport stop | 75% |
| **Air pollution**<br>Decrease in mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 26.25 µg/m³ of PM2.5 |
| **Road safety**<br>Decrease of traffic fatalities in the urban area, per 100.000 inhabitants | 9.09 fatalities/100,000 hab |

# Highlights

## Chile's NUMP has not been developed as a single integrated instrument, but rather as a series of components linked to each other

The National Urban Mobility Strategy has already been approved by the current Minister of Transport and is available to be used by subnational governments. On the other hand, the National Sustainable Mobility Program (investment program) will be the main public instrument from the central government to facilitate the financing of the measures contemplated in the Strategy. This instrument is still in the formulation stage and its completion is expected by the end of 2022 when it will be validated through the budget discussion in parliament.

Finally, regarding the studies on emissions from the sector, these do not require validation or approval by specific authorities. However, they are an important input for the preparation of the sectoral climate change plan, which will be mandated once the Climate Change Framework Law, currently under discussion in Congress, is approved.

## Integrated multi-sector and multi-level coordination, communication and participation have been critical elements in the preparation of Chile's NUMP

Regarding multisectoral and multilevel governance, Chile is a highly centralized country, where there is a low public culture of territorial linkage and involvement in decision- and policy-making. This has impacted the development of the NUMP due to the difficulties in incorporating the particularities of the different territories into their development plans, as well as in linking transport with other sectors and ministries, making it difficult to formulate comprehensive measures to reduce emissions.

Moreover, the empowerment of the transport sector around the climate crisis is still a challenge. Although the NUMP has facilitated this approach, there is still a significant gap for the transport sector to communicate in a transparent and timely manner the impact that the sector itself has on the climate and opportunities for change.

In Chile, there are still important challenges for an appropriate integrated urban planning that incorporates the climate crisis, but also other relevant development issues, such as the gender perspective and the reduction of inequality, areas that are not yet fully assumed by the different sectors that directly influence the production of the urban space and its dynamics.

## The national strategy for Sustainable mobility was adopted as the first climate-aligned policy instrument in the Chilean transport sector

The greatest advance that occurred during 2021 was the validation and publication of the National Strategy for Sustainable Mobility. This strategy is the first official document of the State of Chile that directly establishes political-strategic guidelines that link the transport sector with climate change, through the definition of a vision, objectives, measures, and general criteria so that the subnational governments can speed up the implementation of sustainable mobility measures.

On the other hand, considerable progress was made in the studies on the emissions generated by the sector, especially in terms of future projections, under the business as usual scenario and under climate scenarios, mainly linked to the goals established in the NDC and the Long-Term Climate Strategy.

# Antofagasta, Chile

Partner city

Status of the project: ongoing technical assistance


## Basic Information

Antofagasta urban area: 30,718 $km^2$

Population: 388,545 | Growth rate: 2%

GDP per capita: USD 47,000

Modal Share

- Formal public transport: 25.08%
- Walking: 28.31%
- Cycling: 0.33%
- Private cars: 35.13%
- Taxis: 9.13%
- Freight vehicles: 1.28%
- Other: 0.74%

National GHG emissions per capita: 5.92 ($tCO_2eq$)

Exposure to climate change: MEDIUM

*Region capital city*

## Context

Antofagasta is a city 30 km long and on average 2 km wide, where about 360 thousand citizens live, according to the 2017 census. The city, whose economic development is mainly linked to the copper mining industry, is characterized for being the destination of tens of thousands of migrants seeking job opportunities. The intercensal variation (2002-2017) shows a higher population increase of 22.99%, which is greater than the growth experienced in the country (16.26%). The absolute growth of the population in Antofagasta stands out, with 72,396 new inhabitants in the intercensal period. An important part of them are immigrants who come to the region attracted by the climate and job opportunities.

Around 100,000 vehicles circulate daily in the city, and the average travel distances are between 5.9 and 7.4 km. Geographic restrictions and demographic pressures have pushed the development of the city to the north and the south. More than 60% of the population lives in the northern sector. However, most of the city's services, employment, and economic activities remain concentrated in the centre, creating congestion and putting additional stress on the city's already fatigued and poorly functioning transport network. The transport network has, in turn, only exacerbated urban development and land use challenges. The two branches of the private train that transports materials from the mines to the port pass through the heart of the municipal territory, dividing the city in two, interrupting traffic flows and consuming a large part of the urban territory with its right of way.

Faced with this, the Regional Government, in conjunction with the Local Government and other institutions, have promoted a series of mobility initiatives that complement the current public transport system and the urban transport master plan. However, these are not necessarily linked to each other and their impact, in terms of emissions, has not been modelled.

The regional government of Antofagasta has the mandate and responsibility to finance mass public transport infrastructure, but not its operation. It has the authority to borrow from international finance sources. Systems and procedures are not yet in place to monitor, evaluate and report on urban transport development.

The SUMP process has already achieved important milestones. A Technical Board that institutionally and politically validates the development of the Plan has been established, as well as a Social Board responsible for including demands and perspectives of citizens and other stakeholders into the SUMP. Along with this, a website has been set up (www.movilidadantofagasta.cl) that functions as the main communication tool with citizens, hosting surveys and news, among others.

Phases 1, 2 and 3 of the SUMP development process have now been completed. there is already a consolidated vision, objectives, indicators, and goals for the Plan, being able to start with the planning of measures and the modelling associated with them. The official launch of the SUMP is estimated to be September 2022.

## Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan

**Funded by:** European Union

**Funding amount:** EUR 500,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Regional Government of Antofagasta

**Supported Activities:**

- Develop an Integrated Sustainable Urban Mobility Plan, which adds environmental goals and monitoring, reporting and verification (MRV) mechanisms to existing measures and isolated modal plans
- Support the integration of various modes of transport and improve existing bike lanes, sidewalks and public transport infrastructure
- Formalise the Technical Board for Sustainable Mobility in the city
- Train regional and municipal government officials
- Promote citizen empowerment and provide them with access to the decision-making arena, with a particular focus on investments

## Status of implementation

**Project start:** May 2018

**Expected project completion:** Q2 2022

**Completed outputs:**

- Status quo analysis including emissions inventory
- Implementation of the strategy for communications and participatory process, including the web page and social networks accounts
- Implementation and results of online surveys
- Implementation of the Technical Board
- Implementation of the Social Board
- MRV plan
- Phase I to IV completed
- Draft SUMP policy text was written

**Next expected outputs:**

- Implement an Observatory for Sustainable Urban Mobility in the city of Antofagasta
- Communications products (graphic summary of the policy text, short video, poster)
- Launching of the Plan

# SUMP key measures and cost estimates

The following table highlights the most significant measures identified in the SUMP.

| Measure | Cost Estimate | |
|---|---|---|
| Mass transit system | USD | 518,000,000 |
| Network of high standard pedestrian routes | USD | 268,000,000 |
| Extension of cycle lanes network | USD | 6,600,000 |
| Traffic calming measures | USD | 4,400,000 |
| Incentives for the generation of centralities | USD | 2,800,000 |
| Integrated intermodal stations and terminals | USD | 14,800,000 |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the SUMP.

| Urban transport investment measures | CAPEX Estimate | |
|---|---|---|
| Public transport | USD | 520,000,000 |
| Active transport | USD | 275,000,000 |
| Disincentive to car use | USD | 4,400,000 |
| Land use and public space | USD | 4,000,000 |
| Freight and logistic transport | USD | 520,000 |
| Intermodality | USD | 280,000,000 |
| Governance | USD | 15,000,000 |
| **Total** | **USD** | **1,098,920,000** |

# Core impact indicators baselines

| Indicator | Baseline - 2018 |
|---|---|
| **Total annual transport-related GHG emissions (Mt $CO_2$eq)** | 0.372 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 940 kg $CO_2$eq / capita |
| **Access to public transport**<br>Proportion of the population living 500 meters or less of a public transport stop | 80.4% |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 10.5 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 5.56 fatalities / 100,000 hab |

# Highlights

Even if it is not a binding policy instrument, ensuring budget at different levels of government and governance bodies can uphold the SUMP.

The SUMP public policy draft is currently under stakeholders' revision, which will be complemented this year with the implementation of a Mobility Observatory for the city and a series of communication inputs to bring the Plan closer to the citizens.

The Antofagasta SUMP is a non-binding public policy instrument, so its approval rests in the hands of the principal, which in this case corresponds to the Regional Government of Antofagasta. However, to secure part of the public funding required for the plan, the Regional Government has committed to sign a "Programming Agreement", which is the public instrument through which Regional Governments commit shared funding with Ministries for the financing of local initiatives.

The Regional Secretariat of the Ministry of Housing and Urban Development has decided to give continuity to the work carried out by the SUMP participatory roundtables, merging them and taking over their leadership. This will make it possible to exercise control over the implementation of the SUMP and to continue empowering the stakeholders involved.

## Sustainable urban mobility should be planned in interaction with other urban planning instruments and adapted to the local context

In the case of Antofagasta, the SUMP was conceived to be compatible with other urban public policies, such as regeneration, housing or development plans, since mobility cannot be understood from a single sectoral perspective. Several urban components influence urban mobility and vice-versa.

For the development of the SUMP in Antofagasta, the SUMP methodology proposed by MobiliseYourCity had to be harmonised with existing transport or mobility planning processes and experiences in the local territory. Aspects such as modelling, indicators or measures' scope were already addressed through existing transport plans.

## Participation is a crucial component of the SUMP formulation, but related strategies must be the most cost-efficient alternatives considering the available resources

Although the generation of two participatory roundtables (the Technical Roundtable and the Social Roundtable) was a successful process in Antofagasta, it required more resources and the need to cross-reference the work carried out in both spaces. Generating a single broad participatory roundtable (multi-sectoral, multi-level and multi-stakeholder) from the beginning of the Plan can reduce costs and increase efficiency for processes management.

It is extremely important to be able to communicate progress while the Plan is under development so that people can become involved in it to generate a "collective awareness" about the urgency of acting in the transport sector to mitigate the climate crisis. The implementation of the website and other digital tools were of great help in this regard.

# Colombia

Partner country

Status of the project: **ongoing technical assistance**


## Basic Information

Population: **50,662,678 (2020)** | Growth rate: **0.8%**

Percent of urban population: **77.1%**

GDP per capita: **USD 5,334**

Percentage of the population living below the national poverty lines: **27%**

Annual average infrastructure expenditures as percent of GDP: **1.8%**

Nationally Determined Contribution (NDC): **Committed reduction of 51% of overall GHG emissions compared to BAU by 2030, unquantified mobility target**

National GHG emissions per capita: **3.75 ($tCO_2eq$)**

Proportion of transport related GHG emissions: **12%**

Exposure to climate change: **HIGH**

## Context

Colombia is the third most populated country in Latin America after Brazil and Mexico. The capital city Bogota has the biggest population number and is the centre of the economic, political and financial activities in the country. About 77.1% of its citizens live in cities and the remaining 22.9% in rural areas where access to education, public health and other basic services is still limited in many regions. Poverty and inequality are big challenges for Colombia, with a multidimensional poverty index of 20.2% and a GINI index of 0.522, placing it as the second-most unequal country in Latin America only after Honduras. The Gross Domestic Product has been growing for the last two decades, with an average annual growth rate of 3.8%, according to the reports of the National Ministry of Finance and Public Credit. This is a remarkable achievement given the country's long-standing internal conflict. Colombia is an upper middle-income country. Historically, petroleum and other energetic products have played an important role in Colombia's economy. The country's priority exports and industrial growth areas are petroleum, electronics, agriculture, information technology, and shipbuilding.

Since road transportation in Colombia was responsible for 12% of the overall country GHG emissions (29 $MtCO_2e$) in 2017, tackling the transport sector is crucial for complying with climate change mitigation goals and electric mobility can be a major tool for achieving this. Additionally, public concern about the negative impacts of air pollution on public health has increased over the past years. The transport sector (Diesel freight and public transport, mainly) is responsible for 25% of $PM_{2,5}$ emissions in large cities, which is the most relevant air pollutant in the Colombian context.

Buses play an important role in Colombia's transport landscape. However, given the increasing urban population densities and the deteriorating air quality (23% of Bogota's local air pollution is generated by buses), the bus systems' various configurations – from small feeder buses to bi-articulated high frequency buses – together present an untapped potential for providing access to clean urban mobility. Electrification of public transport is an intersectoral priority of at least four national policy agendas (Energy Efficiency, Climate Change, Air Pollution and Urban Mobility), and three international policy commitments: the Paris Agreement, the New Urban Agenda and the Sustainable Development Goals.

Since the electrification of transport is considered to be key for complying with climate commitments, for promoting green growth, and for protecting human health, the National Government has started developing a National E-Mobility Strategy in 2019. As electric buses have considerably higher upfront investment costs compared to traditional technologies and the technology is relatively new in Colombia, the aim of the technical assistance is to overcome these barriers with a program that supports the electrification of Colombia's public passenger transportation systems.

The technical assistance has four workstreams aiming at creating a suitable environment for electromobility deployment in cities without significant zero-emission fleets:

- Technical and regulatory design: Identify the technical and regulatory needs that should be located at the transport policy level in the country to enable the transition to electric public transport systems.
- Financial design: Analyse the context, barriers, costs, and financial conditions of public passenger transportation in Colombia, to construct in conjunction with our counterparts an instrument to facilitate investments on electric fleet and infrastructure.
- Design of coordination and governance scheme: Through a systemic process with the national government counterparts, define the decision-making frameworks and processes to approve and follow up on the policies and plans that enable technological advancement.
- Design of MRV system: Build methodologies and capacities to monitor the development of policies and their impacts, especially regarding the mitigation of Greenhouse Gases.

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Programme (NUMP)

**Type of NUMP:** Programme NUMP

**Funded by:** German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV)

**Funded amount:** EUR 800,000

**Implemented by:** GIZ through the TRANSfer III project

**Local counterpart:** Ministry of Transportation

**Main purpose of the NUMP:**

The TRANSfer project is developing a National E-Bus Promotion Program that comprises national investment program for clean transport systems, enabling institutional arrangements and capacities for large scale and a monitoring, reporting and verification methodology for e-buses deployment.

**Supported activities:**

- Financial and economic analysis for e-bus deployment at large scale
- Prefeasibility of a public investment fund
- Supporting implementation of an institutional framework on e-mobility
- Funding national and internal governance
- Diagnosis on technical gaps and barriers for policy makers
- Ex-ante and ex-post MRV system preparation
- Support to legally structure a national fund for e-buses

# Status of implementation

**Project start:** 2019 Q1

**Expected project completion:** 2022 Q1

**Completed outputs:**

- Zero emissions vehicles' investment fund for buses and freight legally established
- Fleet replacement and investment scenarios for every transport system in the country
- Prefeasibility, structure proposal and stakeholder awareness for the instrument
- National scale institutional arrangement for e-mobility
- Operation and maintenance of e-bus training program in place with an employability and gender perspective
- Course for e-buses system planning and electricity procurement for operators
- Mitigation potential and MRV methodologies for e-buses in line with the National Registry of Emissions Reductions (RENARE)
- Assessment of regulatory and capacity building needs, technical and policy barriers for e-bus deployment
- International course on transport systems based on e-buses (with Moving Chile)
- Employability strategy and technical curriculum with a gender perspective
- Electricity procurement guidelines
- E-bus workshop in Cali, Colombia (24-25 February 2020, 70 participants from cities, Ministry of Transportation, and academia)

# NUMP key measures and cost estimates

The following table highlights the most significant measures identified in the NUMP.

| Measure | Cost Estimate[1] |
|---|---|
| Public fund to finance bus fleet renewal | USD 595 million |

The following table summarises the total capital expenses (CAPEX) estimates for different types of measures in the NUMP.

| Urban transport investment measures | CAPEX Estimate (€M) |
|---|---|
| Nation-wide bus fleet renewal | USD 715,000 |
| Street shaping urban roads and traffic management | 0 |
| Other measures | 0 |
| **Total** | **USD 715,000** |

# Finance leverage

| Financing resulting from the NUMP | Source | Amount |
|---|---|---|
| E-motion project funding proposal for Latin America to the Green Climate Fund | AFD | EUR 570,000 |
| Financial analysis and pre-feasibility study of the renewal e-bus fund | Closing Investment Gap | EUR 57,000 |
| Renewal e-bus fund structuration | National government | USD 127,000 |

# Projected impacts

| Indicator | Impact 2030 (NUMP vs BAU) | Baseline - 2018 | Projected 2030 BAU | Projected 2030 NUMP scenario |
|---|---|---|---|---|
| **Total annual GHG emissions (Mt $CO_2$eq)** | -1.80 Mt $CO_2$eq | 1.27 Mt $CO_2$eq | 2.04 Mt $CO_2$eq | 1.48 Mt $CO_2$eq |

1 1 EUR = 4,429.65 COP – 31/01/2022

# Highlights

## Electrification of public transport in Colombia still needs public investment to cover capital costs

Studies indicated that the difference in the total cost of ownership between an internal combustion engine bus and an electric unit was considerably high. As a result, transport authorities and public transport operators in intermediate and small-sized cities could not cover electrification's capital costs through soft loans. Instead, a considerable package of subsidies is required to make the e-bus technology competitive regarding its capital cost investments.

## The national fund for e-bus renewal was legally created through a the enaction of a national law

In 2021, a national law for climate action (Ley 2169 – 2021) was enacted, aiming at establishing goals and actions to achieve carbon neutrality, climate resilience and low-carbon development in Colombia in the short, medium, and long term. The law creates a national fund for the technological upgrading of the public transport systems and freight fleet. This fund will promote the purchase of low or zero emission vehicles and the support infrastructure required for the energy supply of transport systems. The potential financial sources for the fund include local authorities, non-reimbursable technical cooperation, grants, financial revenues, among others. Together with the government, the implementing partner (GIZ) is committed to keep the support to find feasible funding alternatives to feed the created fund.

This law builds upon the efforts of the Colombian government adopting the National Strategy of Electric Mobility. Its objective is the incorporation of 600,000 electric vehicles until 2030 through an adequate regulatory framework, economic and market-based mechanisms, the establishment of technical guidelines, and the deployment of charging infrastructure.

## Nationwide emission reductions programmes in the transport sector can be comprehensive but flexible

The technical assistance delivered in Colombia did not follow the traditional approach to formulate a NUMP, but tried to meet the needs of four pre identified barriers for the deployment of electric mobility at the national scale, and subsequently the achievement of effective mitigation outcomes. Thus, the four workstreams of the project (finance, governance, capacities and MRV) interacted harmonically to deliver concrete results related to political and financial commitment to the renewal of public transport fleet in the country. However, the project did not follow the traditional guidelines to formulate a NUMP.

## Sustainability of electrification goes beyond ensuring funds and includes support infrastructure, capacity development, and systemic change

Building capacities in electric mobility within the transport sector is key to ensure the sustainability of a strong fleet-renewal policy. Transport authorities need to interact with the energy sector in order to enable fertile conditions for electromobility deployment. Moreover, operators and technicians need to be trained in the maintenance and mechanics of electrical vehicle systems, so operation management is ensured. The inclusion of a gender focus in this component intended to close the gap for women to access jobs in the transport sector.

# Ibagué, Colombia

Partner country

Status of the project: ongoing technical assistance


## Basic Information

Urban area: 56,8 km$^2$

Population: 529,635 | Growth rate: 0.69%

GDP per capita: USD 5,024

Modal Share

- Formal public transport: 34.37%
- Informal public transport: 0.3%
- Walking: 26.89%
- Cycling: 0.9%
- Private cars: 11.1%
- Private motorbikes or 2-wheelers: 15.08%
- Taxis: 7.26%
- Other: 4.7%

National GHG emissions per capita: 3.58 ($tCO_2eq$)

Exposure to climate change: MEDIUM

*Region capital city*

## Context

Ibagué has 541,101 inhabitants (DANE, 2018), distributed 501,991 (92.77%) in the municipal capital and 39,110 (7.23%) in populated and dispersed rural centres. Urban area is located in the Andean region with great environmental richness, and it is strategically placed within the country, establishing economic, social and cultural interactions with cities such as Bogotá and Cali, 205 km and 279 km away, respectively. According to the report Ibagué Sostenible (2018), the city has great opportunities to consolidate its vocation and play a more relevant role at the national level. Regarding territorial articulation, Ibagué is an obligatory point of passage between the Pacific and the centre of the country. This circumstance has positioned the city as a road articulator facilitating the mobilisation of passengers and cargo. Additionally, Ibagué's economy revolves around commerce, services, agriculture and mining, generating products and services of high added value.

Ibagué's urban growth in recent years, especially in its outskirts, has generated accessibility problems to city's downtown and caused travel times to increase substantially. Hence, it is important to integrate new mobility models that connect the historic centre where much of the urban equipment is located. Mobility and Public Space Master Plan estimated that 905,000 trips are made in Ibagué every day, of which 36% are made to work, 25% study, 11% are for personal errands and the remaining 28% for shopping, and accessing health, recreation, and others. Mobility accounts for 32% of total $CO_2$ emissions in Ibagué, which makes it the second most polluting sector in the city. The city has 35.4 kilometres of cycle infrastructure.

The municipality of Ibagué does not have exclusive roads for public transportation since the Strategic Public Transportation System (SEPT – Mass Transit System) was approved in August 2020 and now it is under implementation. According to the Mobility and Public Space Master Plan, the public transportation service has 32 routes with a vehicle fleet of 1,018 vehicles, of which 73% are buses, 16% are coaches and the remaining 11% are minibuses 11%. The city has a Master Plan of Mobility and Public Spaces.

The Mayor's Office of Ibagué, headed by Mayor Andrés Fabián Hurtado Barrera (2020-2024) has 15 sectoral secretariats: General, Planning, Finance, Administrative, Government, Health, Education, Economic Development, Culture, Environment and Risk Management, Community Social Development, Agriculture and Rural Development, Infrastructure, Mobility and Information and Communication Technologies – TIC. The local Counterpart has the mandate and responsibility to finance mass public transport infrastructure. It does not have authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban mobility.

The project implemented by GIZ through the EUROCLIMA+ Program consists in a pilot plan for the implementation of a sharing system for assisted pedalling bicycles for the city of Ibagué. This system will have eight stations, 69 mechanical bicycles and 16 electric-assisted bicycles across the city centre. The strategic objective of the project is to increase the number of residents and circulating populations in downtown using shared bicycles while promoting cycling as main mode of transportation. Additionally, the pilot project aims to build capacities for sustainable mobility of public authorities. The pilot seeks to reduce the levels of environmental pollution from mobile sources and promote healthy lifestyles by increasing the modal share of bicycles from individual motorised transport.

For the implementation of the public bicycle system pilot, EUROCLIMA+ counts as a strategic ally with INFIBAGUÉ, an entity that seeks to encourage, promote, and contribute to sustainable development and a social sense of the city by bringing together government agencies, economic associations and citizens. The mentioned organisations and the Secretariat of Mobility will be responsible for the implementation of the pilot project. To this end, licenses have been arranged with the Planning Secretariat for the installation of the stations in public spaces and the mechanisms for the future sustainability of the pilot have been coordinated with the Municipal Council.

The technical assistance contributes to institutional strengthening by improving the capacities of the mayor's staff involved in the project by linking them to the private sector and other experiences through the Community of Practice on sustainable urban mobility.

## Support from the Partnership

**Technical Assistance:** Pilot Project Development

**Funded by:** European Commission

**Funding amount:** EUR 500,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Ibagué Municipality

## Supported Activities:

- Formulation of a bike sharing pilot project
- Development of a strategic planning document that ensures the sustainability of the project
- Proposal of a business model combining both public and private resources for the bike sharing system
- Capacity building of public authorities for sustainable mobility planning

# Status of implementation

**Project start:** 2019

**Project completion:** Q2 2022

**Completed outputs:**

- Technical, legal and financial structuring in the feasibility stage and support in the tender process for the system implementation
- Successfully completed tender process, in which the implementation and start-up of the pilot was awarded in Q3 of 2021
- INFIBAGUÉ managed permits for the installation of stations in public spaces with the Planning Secretariat
- Manufactured bicycles, and stations and software development

**Next expected outputs:**

- The bicycles are expected to arrive in the country at the end of March 2022
- Inauguration of the system in May 2022

# Highlights

## Gradual implementation of the bike sharing systems prevents the emergence of obstacles for scaling up the measure

The operation of a public bicycle system requires specific experience, so it is advisable to implement a modest system that can grow over time, according to user demand. The coexistence of several types of bicycles, the implementation of rather unconventional technologies or the location of stations without enough user demand can affect the implementation and financial closure of the business model.

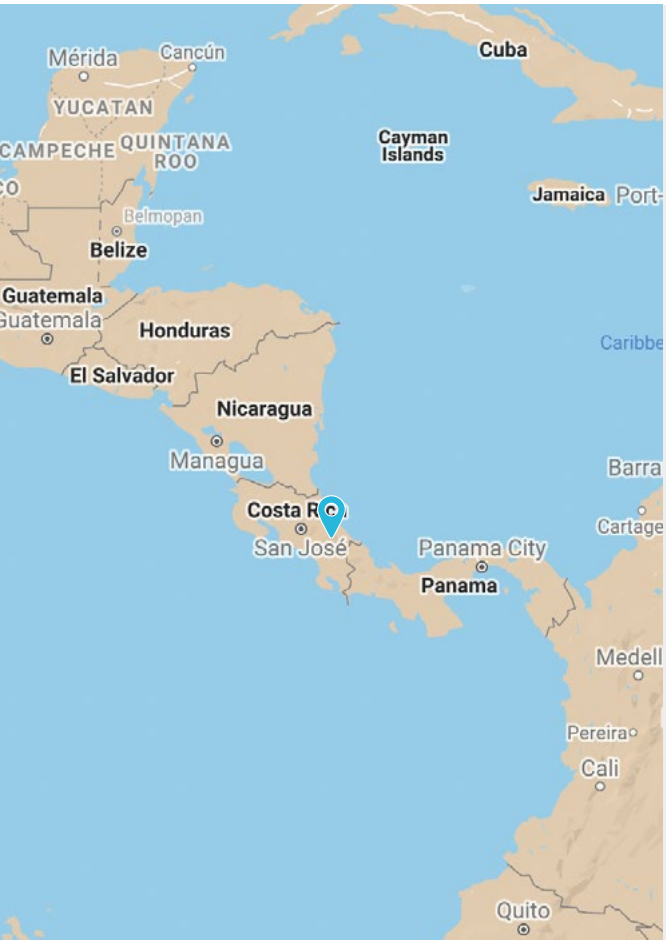
## The business model for the bike sharing system in Ibagué is potentially replicable for other Colombian cities

The pilot project is a low-cost strategy to encourage modal shift from motorised to active modes, and in this sense, together with other strategies such as segregated lanes, it is an effective tool to promote the decarbonisation of transport. The business model designed for Ibagué might be replicated in other Colombian cities with minor adjustments based on local financial and technical capacities.

# Curridabat & Montes de Oca, Costa Rica

Partner city

Status of the project: ongoing pilot project




## Basic Information

Urban area: Curridabat 15.92 km$^2$, Montes de Oca 15.16 km$^2$

Population: 79,577 (Curridabat) and 62,533 (Montes de Oca) | Growth rate: 0.78% (Curridabat) and 0.36% (Montes de Oca)

Cantons of the Metropolitan Area of San José

GDP per capita: USD 11,215

Modal Share (Metropolitan San Jose Area, 2016)

- Formal public transport: 26%
- Informal public transport: 2%
- Walking: 36%
- Cycling: 1%
- Private cars: 27%
- Private motorbikes or 2-wheelers: 5%
- Taxis: 2%
- Train: 1%

Exposure to climate change: MEDIUM

## Context

Montes de Oca and Curridabat are two of the 21 municipalities of the metropolitan area of San José; an urban agglomeration with more than 1.5 million inhabitants (one-fourth of the total national population). They are conurbations in the east zone of the metropolitan sprawl. Both cantons have a very high development, with a service-based economy. Moreover, Montes de Oca hosts many well-known universities in the country. Most of the residential and commercial activities for both municipalities are located in connection to the limit with the canton of San Jose, Costa Rica's capital.

As of 2016, more than 2.6 million trips were generated within the metropolitan area of San Jose in a working day. Although sustainable transport alternatives dominate the modal split (36% walking and 26% public transport), private modes (cars and motorbikes) have gained relevance, sharing 32% of the total trips. The motorisation rate is 0.5 cars per household and is expected to grow 4% annually. In contrast, cycling has a very low penetration as a transport mode.

Half of the trips in Curridabat and Montes de Oca are either internal or "inter-cantonales", falling within their own territorial boundaries. The rest have the canton of San Jose as the destination. Historically, and due to their geographic and social circumstances, cycling has held a more significant role in urban mobility in Curridabat and Montes de Oca compared to neighbouring districts. This preference for the bicycle is influenced by the presence of students in the area and the working class in medium- and low-income settlements (mostly men).

There is no mass transit system in the municipalities, as in the rest of the metropolitan area. However, in 2017 an Integral Sustainable Urban Mobility Plan (PIMUS for its acronym in Spanish) was formulated for the metropolitan area of San Jose aiming at integrating all the modes of transport with urban planning. The PIMUS proposes the promotion of active modes of transport and the deployment of cycling infrastructure.

Since 2002, Curridabat's administration has promoted and encouraged a progressist and environmental vision of the city. Under the slogan "Ciudad Dulce" (Sweet City) the local government has undertaken interventions favouring biodiversity and the balance between constructed and natural environments. The canton has set a long-term commitment for active mobility. Decision-makers and city officials in both municipalities consider themselves as active urban cyclists. In turn, Montes de Oca implemented one of the first dedicated cycling lanes in the metropolitan area enhancing its connection with the canton of San Jose.

The local counterparts do not have the mandate and responsibility to finance mass public transport as it is national jurisdiction. As for the transport or cycling infrastructure, responsibilities are shared between national and local authorities, depending on the type of roads where cycling lines are located. Systems and procedures are partially in place to monitor, evaluate and report on urban mobility.

Considerable efforts were needed to consolidate the existing cycling infrastructure and to enlarge it beyond isolated initiatives. Additionally, governance schemes that could enable the construction and maintenance of cycling infrastructure were missing, leading to limited coordination between national ministers and local governments. In this context, the lack and atomisation of cycling infrastructure, and the blurry responsibilities of public authorities for active mobility planning threatened the long-term scalability of such initiatives.

The objective of the pilot project was to improve the conditions for the mobility and accessibility of urban cyclists in the cantons of Curridabat and Montes de Oca by developing cycling demand data, a plan for cycling infrastructure for both cantons, and the design and adequation of a prioritised network of cycling lanes. Participatory and educational processes for data collection and systematisation were implemented with cycling communities in the study area, though the pandemic limited in-person activities.

## Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** European Union through EUROCLIMA+

**Funding amount:** EUR 400,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Municipality of Montes de Oca, Municipality of Curridabat, Ministry of Public Infrastructure and Transport, Ministry of Planning, Ministry of Environment (through Dirección de Cambio Climático) and Ministry of Foreign Affairs.

**Supported activities:**

- **Information gathering:** Collect information on cycling infrastructure needs in a participatory manner in the cantons of Montes de Oca and Curridabat.
- **Diagnostic:** Identify the infrastructure needs of people who use bicycles as a means of transport, prioritised based on data collected, technical criteria, and participation.
- **Implementation:** Design and build the infrastructure in the cantons of Montes de Oca and Curridabat while strengthening the urban cycling planning capacities.
- **Evaluation:** Systematise and disseminate experiences and lessons learned during the project implementation.

# Status of implementation

**Project start:** 2019 Q4

**Project completion:** 2022 Q1

**Completed outputs:**

- **Participatory data collection:** participatory workshops with medium- and low-income cyclists to collect information on urban cycling in the canton identified infrastructure and capacities needs on urban cycling for participants. During the lockdowns related to the COVID-19 pandemic, some workshops were held virtually, and information was gathered through interviews and secondary sources.
- **Prioritised planned infrastructure:** identified priority infrastructure for urban cycling based on data collected, technical and participatory criteria. This proposal included 54km of cycling lanes in Montes de Oca and 60km in Curridabat. 20 km were to be implemented with EUROCLIMA+ funds.
- **Adequation of cycling lanes:** permanent implementation of an initial 4-km cycling lane in Montes de Oca in March 2021 followed by the implementation of another 16 km in a second phase finished in late 2021.
- **Scaling-up experience:** experience and lessons learned documented and disseminated, to promote the development of similar and complementary projects in other cantons of the San Jose Metropolitan Area.
- **Strengthening capacities:** Population of the cantons of Curridabat and Montes de Oca sensitised about better urban cycling.

# Highlights

## Tactical cycling interventions favour efficient use of resources

The selection of tactic alternatives for cycling lanes implementation was a wise move that enhanced efficiency regarding the use of the limited available resources. Thus, the bike lanes were implemented with the minimal required elements for their operation, though ensuring adequate conditions of road safety and considering the national technical guidelines. The bicycle lines implemented in this project became permanent as the experience tested and provided feedback to the national technical guidelines for cycling infrastructure adopted during the project execution. Other actions aiming at fostering intermodality made part of other activities linked to the pilot project, such as cycle-friendly adequations in train stops to allow cyclists to access public transport facilities.

## Replicability in the near future is ensured due to the assignation of both national and local resources to continue the cycling network expansion

Replicability in the future is expected to occur through a snowball effect. Efforts aiming at planning cycling infrastructure at the metropolitan level produced the Intermunicipal Territorial Plan of Active Mobility overseen by the RIMA.

As the municipalities gained experience in how to adequate cycling infrastructure and better coordinate with the national government, implementation of the rest of the cycling lanes is likely to take place. Curridabat's municipality is already financing the expansion of its cycling network. This situation enables the incremental improvement of the existing network in both the short and long term. The Council of Road Safety (COSEVI for its name in Spanish) will also contribute to installing bollards in zones where cars reach high speeds.

## Both political commitment and interinstitutional coordination enable project success

The driver for success in this project was the joint political commitment regarding active mobility and the coordinated work among technical officials and decision-makers. This group of collaborators was flexible and acted promptly to tackle emergent challenges. They also leveraged opportunities, especially those coming from the sanitary situation in the pandemic context. This group sought to enable synergies with other stakeholders in the public and private sectors and civil society. A governance structure for active mobility was created: "Red Intercantonal de Movilidad Activa - RIMA" (Intercantonal network of active mobility) to consolidate the cycling and walking network among different levels of government.

## Curridabat and Montes de Oca lead push cycling forward in the metropolitan policy agenda

In the launch of the RIMA, both Curridabat and Montes de Oca took the lead to continue the implementation of the Intermunicipal Plan of Active Mobility, encouraging neighbouring municipalities to undertake actions to deploy infrastructure for walking and cycling.

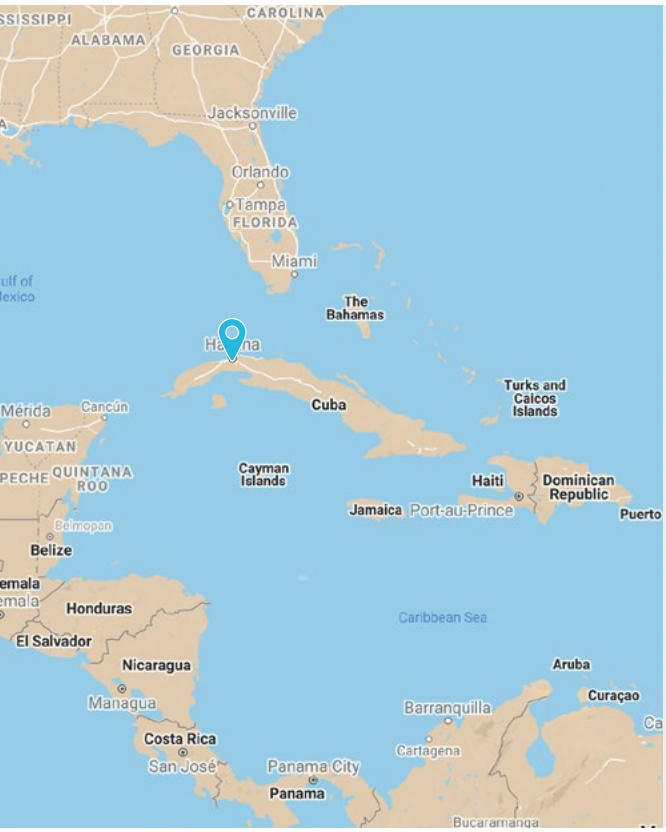
Stakeholders and project participants achieved coordination with the Costa Rican Railway Institute (INCOFER for its acronym in Spanish) to allow cyclists access to the train infrastructure. The model is replicable.

The municipalities approved budgets to expand cycling infrastructure. The Pilot Project also leveraged additional financial resources from the EU-funded MUEVE project to build part of the priority cycling corridors.

# Havana, Cuba

Partner country

Status of the project: ongoing technical assistance




## Basic Information

Urban area: 728 km$^2$

Population: 2,140,423 | Growth rate: 0.16%

GDP per capita: USD 8,821

Modal Share

- Formal public transport: 19.4%
- Walking: 57.3%
- Cycling: 1%
- Private cars: 9.7%
- Private motorbikes or 2-wheelers: 1.6%
- Taxis: 6.3%
- Moto taxis and Freight vehicles: 3.3%

National GHG emissions per capita: 3.74 ($tCO_2eq$)

Exposure to climate change: HIGH

*Country Capital City*

## Context

Havana, the Cuban capital, occupies 728,26 km² (0.7% of the national area). Its 15 municipalities are home to 2.13 million inhabitants, almost 20% of the country's population. The municipalities Centro Habana, Habana Vieja, Cerro, Plaza de la Revolución and Diez de Octubre are the most densely populated. Centro Habana stands out notably with a gross population density of around 41,000 inhabitants/km² while the net density in the residential areas of the city is only 18,000 inhabitants/km² approximately.

Havana is a city with a polycentric structure. Its growth has preserved the oldest fabrics of some neighbourhoods. The axes that linked the oldest nucleus with the periphery were the basis for the growth from the founding heart to the west, southwest, south, and southeast, which defined a tree-like pattern for the communication routes.

The bay, the fundamental reason for the final location of the city, conditioned a slower pace in the expansion of the city towards the east. The construction of the tunnel of the bay in 1958 allowed for the beginning of the development in this direction. These aspects determined the current structure of the transportation system, which follows a territorial model with a central zone, an intermediate zone and a peripheral zone. Despite the development beyond the central zone, the main concentrations of jobs, the cultural/recreational infrastructure and tourism are in a narrow strip close to the sea, which conditions current mobility patterns, where even today the tunnel is presented as insufficient in terms of mobility.

The city has a public transit system and already has an existing transport master plan or similar document. In Havana, public bus transportation (or "guaguas") is basically organised into two categories: a fleet of "articulated" buses with greater capacity for main routes; and "conventional" buses, for approximately 100 secondary routes.

Both the secondary and main routes are operated by the Havana Provincial Transportation Company, which operates 17 main routes and 104 secondary routes, and has 17 bus terminals for their operations. There are also bus services between Havana and other provinces (Viazul, Transtur, Transgaviota, in CUC, National Buses in CUP).

The Ministry of Transportation (MITRANS) has the responsibility to organise the transportation sector in Cuba and the General Directorate of Provincial Transportation of Havana (DGTPH) has the responsibility to organise the transportation sector in Havana. The General Directorate of Provincial Transport of Havana (DGTPH), the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

Despite being a polycentric city, the main metropolitan functions and the largest number of jobs are only concentrated in the so-called central areas of Havana. The remaining sub-centres have weakened, limiting their ability to offer service and employment to the population. This forces an important part of the population that lives far away from the centre to commute daily to access basic services (schools, hospitals, shops, etc.). The poor conditions of the existing urban mass transport imply that citizens consume excessive time just for their transportation.

One of the most prominent challenges in 2021 was to carry out the sampling and city visit activities under the context of COVID 19, as quarantines imposed by the local government prolonged the consultants' time on the island and reduced the capacity of the participatory events. However, the main objective of producing a high-quality document in line with Cuba's urban mobility policy and strengthening the capacities of local experts and other stakeholders is being met.

The technical assistance contributes to institutional strengthening by adopting an integrated approach, building capacity and offering dedicated trainings.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP) and pilot project

**Funded by:** European Commission

**Funding amount:** EUR 700,000

**Implemented by:** AFD through the EUROCLIMA+ Program

**Local counterpart:** General Directorate of Provincial Transport of Havana (DGTPH)

**Supported activities:**

- Development of a SUMP for the city of Havana
- Definition and preparation of a Pilot Project of sustainable mobility in the city. The project consists in improving public spaces in the Eje de Galeano to guarantee pedestrian flux and accessibility
- Definition and preparation of a project to improve mobility on the 10 de Octobre corridor, Havana

# Status of implementation

**Project start:** 2021 Q1

**Expected project completion:** 2022 Q2

**Completed outputs:**

- Diagnosis and evaluation: inventory and analysis of the current situation
- Vision and strategic goals

**Next expected outputs**

- Action plan
- Monitoring, Reporting and Verification (MRV) Plan

# Core impact indicators baselines

| Indicator | Baseline - 2013 |
|---|---|
| **Total annual transport-related GHG emissions (Mt $CO_2$eq)** | 1,723 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 805 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 3.1 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 3.56 fatalities / 100,000 hab |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | 7% |

# Highlights

## Prioritizing pedestrians in the Galeano corridor can become a flagship project for the further development of sustainable mobility in Havana

In Havana, 70% of all trips take place by bus and on foot. Therefore, the transformation of the pedestrian-heavy Eje de Galeano will be an example of a pro-sustainable urban mobility transformation with an impact on the improvement of the urban environment, and a great impulse for the reception of the SUMP. This pilot project expects to decrease the pollution load, increase pedestrian safety on the axis, improve accessibility to the public space, social resources and cultural facilities.

## Participatory processes have taken place in the framework of the SUMP formulation

In March, the consultancy firm delivered the preliminary report and the participatory approach, communication and visibility plan. In April, Forum 1 was held with the objective of "Identifying the main challenges of the city of Havana in terms of mobility and transport and analysing the perception of the different focus groups on current and future mobility, identifying the main shortcomings and needs to be solved". This event was attended by more than 150 people, allowing the collection of data in the city that generated a mobility diagnosis in Havana. Possible mobility scenarios for the city are being formulated.

## The COVID-19 has proposed additional challenges for the project execution

Adapt to the challenges presented by the island in the face of virtuality, scheduling workshops with more time for better participation. Likewise, increase the channels for disseminating SUMP events and news, so that the population is involved in the process. Consider the quarantines defined by the local government, to have more time available during the visit to Havana.

# Ecuador

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Population: **17,084,358** | Growth rate: **1.8%**

Percent of urban population: **64%**

GDP per capita: **USD 6,346**

Percentage of the population living below the national poverty lines: **21.5%**

Annual average infrastructure expenditures as percent of GDP: **1.63%**

Nationally Determined Contribution (NDC): **general e-mobility transport related NDC**

National GHG emissions per capita: **2.43 ($tCO_2eq$)**

Proportion of transport related GHG emissions: **21%**

Exposure to climate change: **MEDIUM**

## Context

Ecuador is located on the west coast of South America with apopulation of 17 million people of which 64% live in urban areas, especially Quito, Guayaquil and Cuenca. The Andes range divides the country in three main geographical regions: the Coast, the Sierra, and the Amazon. Between 2009 and 2015 the Multidimensional Poverty Index fell 10.2%, meaning that 1.9 million Ecuadorians overcame poverty in that period. The Gini Coefficient index, which measures income inequality, is 0.447%.Apart from the oil industry, other important economic activities include manufacturing, retail, construction, agriculture, and services.

The lack of planning instruments has caused a scattered urban expansion in the country. The rapid urban settlement process led to the creation of vulnerable urban zones. As of 2018, transport sector GHG emission share was 48.5% of the total energy-related emissions in Ecuador. Road transport accounts for 94.4% of the total transport demand. The most widely used services in the country are buses, trolleybuses, and taxis The three main Ecuadorian cities have implemented low-carbon mass transit projects: Quito has a 22-km metro line, Guayaquil implemented a 4-km cable car, and Cuenca operates a 11-km tramway. Some other Autonomous Decentralised Governments have undertaken other actions on sustainable mobility including electromobility and active modes.

The Ministry of Transport and Public Works (MTOP for its acronym in Spanish) is the governing entity of the National Multimodal Transport System comprising road, air, sea, and non-motorized transport. Its vision is to formulate, implement and evaluate policies, regulations, plans, programs and projects that guarantee a safe and competitive transport network, minimising environmental impact and contributing to the social and economic development of the country. In turn, the Autonomous Decentralised Governments are responsible for planning, regulating, and controlling land transport, transit, road safety, commercial and collective transport services, among others.

The objective of this project is to define a national strategy for low carbon mobility applicable to all the Decentralised Autonomous Governments of the country allowing a considerable reduction of greenhouse gases, and maintaining levels of equity and accessibility.

Ecuador's National Urban Mobility Policy (NUMP) will consider the improvement of buses and trucks; knowledge of routes, frequencies, and unit locations; promotion of non-motorised transport; economic incentives to reduce greenhouse gases; and planning for land use and urban mobility.

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Program (NUMP)

**Type of NUMP:** Mixed NUMP (Sectoral strategies and support or investment programme)

**Funded by:** European Union

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the EUROCLIMA+ Program

**Local counterpart:** Ministry of Transportation and Public Works (MTOP)

**Main purpose of the NUMP:**

- Offer cities a general enabling framework for SUMP formulation
- Regulation on a specific set of technical issues
- Regulation on wide range of technical issues
- Technical guidance on a specific set of technical issues
- Technical guidance on an on wide range of technical issues
- Define a national strategy for low-carbon mobility that is applicable to all Decentralised Autonomous Governments in the country and that allows for a considerable reduction in greenhouse gases, while maintaining levels of equity and accessibility

**Supported activities:**

- Preparation of a Low-Carbon Urban Mobility Plan including policies and strategies for the reduction of greenhouse gases
- Preparation of technical guidelines for decentralised autonomous governments for the implementation of the strategy at the local level

# Status of implementation

**Project start:** Q1 2021

**Expected project completion:** Q4 2022

**Completed outputs:**

**The following deliverables have been provided by the consultant**

- Diagnostic support document
- Scenario construction and evaluation criteria
- Methodology of the participatory strategy of the phase

**Next expected outputs**

- Vision, strategy and objectives
- PNMU Action Plan
- Measurement, reporting and verification plan for the National Urban Mobility Policy.
- Final content of 3 cross-cutting guidelines
- A sustainable urban transport financing strategy
- Legislative reform proposal document

# Core impact indicators baselines

| Indicator | Baseline - 2020 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | 15.07 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 243 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 18 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 33 fatalities<br>/ 100,000 hab |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | 14.6% |

# Highlights

## Adapting the data collection campaign into virtual sessions increased participation

The methodology for data collection and event organization was adapted under the COVID-19 health crisis. The adaptation of the events to virtually allowed a greater number of attendees to the NUMP workshops, surpassing the goal set at the beginning of the project.

A large workshop was held with the objective of "Generating a joint reflection and validating the NUMP vision with the key stakeholders, which responds to the Ecuadorian challenges on sustainable urban mobility. This event allowed the virtual attendance of more than 300 people from different parts of the country.

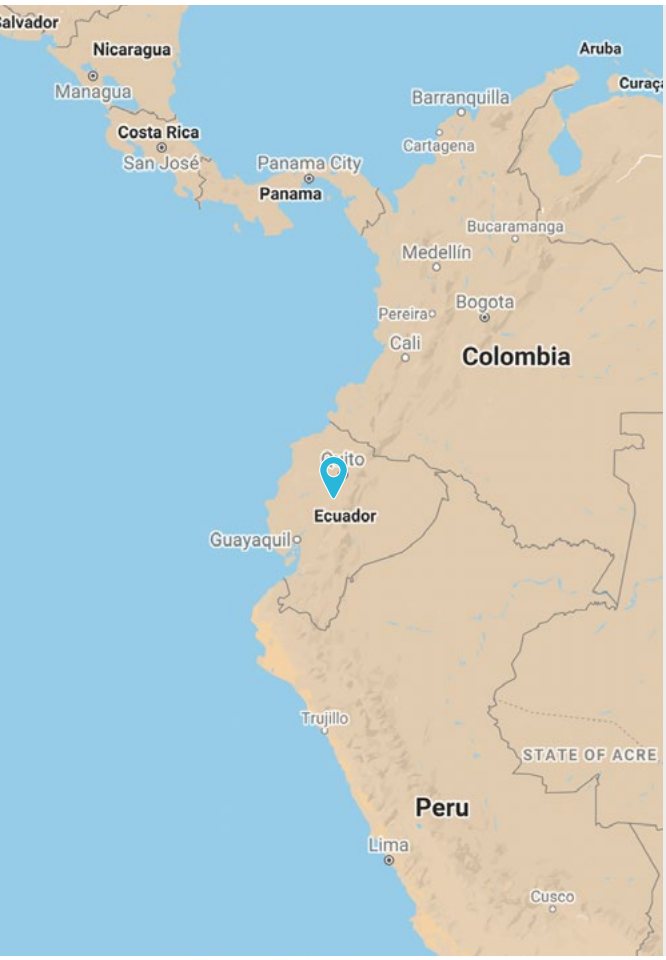
## The first phase of the NUMP cycle was completed

The development of the NUMP began in the first quarter of 2021. In 2021, the consultancy firm has completed Phase 1 (Initiation) of the project, with the delivery and approval of the "Initial Report", and the "Diagnostic Support Document", Phase 2 (Strategy) and Phase 3 (Tactical) of the project.

# Ambato, Ecuador

Partner country

Status of the project: ongoing technical assistance




## Basic Information

Urban area: 1,009 km$^2$

Population: 329,856 | Growth rate: 0.78%

GDP per capita: USD 12,652

Modal Share

- Formal public transport: 34%
- Informal public transport: 1%
- Walking: 12%
- Cycling: 1%
- Private cars: 37%
- Private motorbikes or 2-wheelers: 3%
- Taxis: 10%
- Moto taxis: 0%
- Freight vehicles: N/A
- Other: 2%

National GHG emissions per capita: 3.82 ($tCO_2eq$)

Exposure to climate change: MEDIUM

*Region capital city*

## Context

Ambato is the capital of the Tungurahua province. It is in a mountainous area between 2,500 and 2,750 meters above see level. The city has a difficult topography characterized by ravines, slopes and depressions that make up several regular plains that limit urban development and especially road and transport planning. Ambato is also one of the most important urban centres in the country. Its regional and national centrality makes the city a commercial, industrial, and connecting node between the Amazon, coastal and highland regions. The benefits of being an important node have brought problems of air pollution, noise, mobility, and road safety. The rapid growth of Ambato is affecting the development of urban transport that faces problems such as traffic congestion and accidents.

In this context, there are four basic problems in mobility. The first is its rugged topography that makes it difficult to connect and use modes of transport such as bicycles. The second is a centralized urban definition, which requires that most trips be to the urban centre due to the concentration of activities, in which infrastructure and public space are insufficient to handle traffic flows. The third is the current outdated Transport and Mobility Master Plan that does not present proposals related to sustainable mobility. And, finally, the increase in private car fleet that causes noise, visual and environmental pollution, long travel times, high fuel consumption, as well as GHG emissions.

The existing mass transit system is based upon privately operated buses that grew organically with little planning. The Municipailty is now interested in reconfiguring the mass transit system considering sustainable guiding principles. There is an existing transport master plan from 2013.

The private vehicle is the main mode of transport in Ambato, used by 37% of the population. The growth in private vehicle ownership is faster than the growth of the population and today the rate of car ownership is 180 cars per thousand inhabitants, while the national rate is 133 cars per thousand inhabitants.

The objective of the technical assistance in Ambato is to update the Transportation and Mobility Master Plan for Ambato Canton with a focus on sustainable mobility. It includes the optimization of existing transport systems in the regional capital city and aims at improving mobility in urban and rural areas in order to improve the citizen's quality of life. The project involves greater participation of the citizens. Additionally, the project is strengthening institutions by building capacity to implement the Master Plan and its future updates.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Commission

**Funding amount:** EUR 500,000

**Implemented by:** GIZ through the EUROCLIMA+ Programme

**Local counterpart:** Decentralised Autonomous Government Municipality of Ambato – Directorate of Transit, Transportation and Mobility

**Supported Activities:**

- Optimisation of the Transport systems
- Update of the Transportation and Mobility Master Plan for the Canton of Ambato
- Development of a specific portfolio of mitigation programmes and projects in urban mobility, demand management for private transport, improvement of public transport, and promotion of active transport

# Status of implementation

**Project start:** Q2 2018

**Expected project completion:** Q1 2022

**Completed outputs:**

- Prospective diagnostic
- Technical vision, objectives and measures proposed

**Next expected outputs**

- Participatory vision, objectives and measures development
- Capacity development strategy
- Draft ordinance for enforcing SUMP
- MRV follow-up tool

# Core impact indicators baselines

| Indicator | Baseline – 2020 |
|---|---|
| **Total annual transport related GHG emissions (Mt $CO_2$eq)** | No available data yet |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | No available data yet |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 7.48 µg/m³ of PM2.5 (2021) |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 5.2 fatalities / 100,000 hab (2020) |

# Highlights

## The COVID-19 pandemic has been impacting citizens' mindsets on transport, both in favour of and to the detriment of sustainable modes

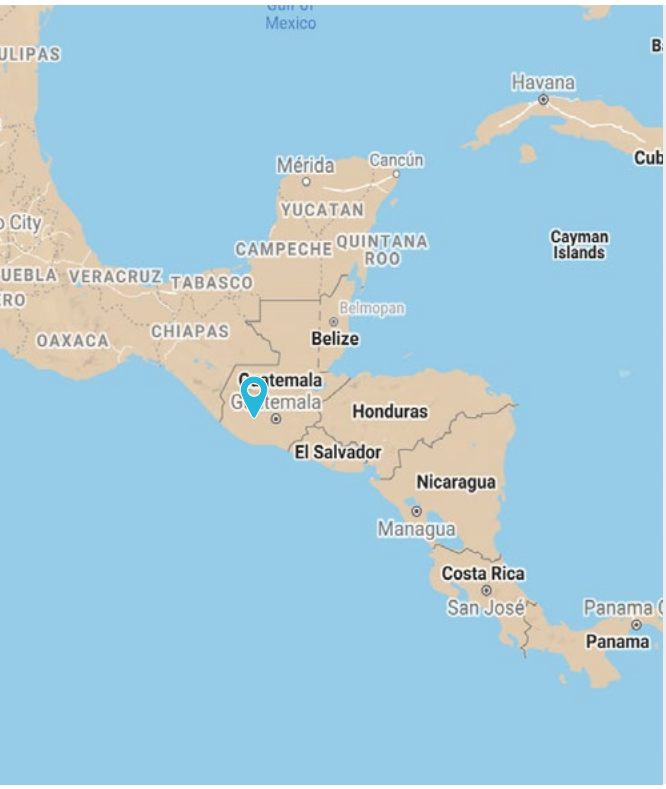
On the downside, mass public transport is generally perceived as unsafe and less people is willing to ride in buses due to the perception created by the Covid restrictions. However, more people are willing to switch to sustainable transport modes despite the apparent difficulties of the terrain, due to pilot implementation of bicycle lanes and as a biosafety measure.

The Municipality, both at the technical and political levels, are engaged in the debate of sustainable mobility; expectations in the population has grown as more sustainable modes of transport are being used.

# San Juan Comalapa, Guatemala

Partner city

Status of the project: ongoing technical assistance




## Basic Information

Urban area: 76 km²

Population: 48,597 | Growth rate: 2.4%

GDP per capita: USD 1,158

Modal Share

- Formal public transport: 10%
- Tuk Tuks: 14%
- Walking: 42%
- Cycling: 12%
- Private cars: 7%
- Private motorbikes or 2-wheelers: 9%
- Other: 6%

National GHG emissions per capita: 2.40 ($tCO_2eq$)

Exposure to climate change: MEDIUM

## Context

San Juan Comalapa is an administrative department of Chimaltenango, Guatemala, with a total population of 48,597 inhabitants. The majority (94%) of the population belongs to the indigenous group of Kaqchikel Maya, with Kaqchikel as the official language. San Juan Comalapa is a rural and low-income area of Guatemala. The municipality includes the city of San Juan Comalapa and 20 surrounding villages. On average, 639 people per km² inhabit the region. It is a compact municipality with many slopes, therefore transport modes are oftentimes difficult to access and tuk tuks have emerged as a feasible transport solution for the community.

Traditionally, family roles are highly genderized; therefore, women mostly fulfil household and care activities. This implies different mobility solutions for women and men, as women tend to take several trips per day to complete various caretaking and housekeeping activities. For example, women travel significantly more often by tuk-tuk (25%) than men (6%). In contrast, men use bicycles for 20% of their trips. Moreover, 11% of the population has difficulties accessing urban mobility services.

The contracting agreement between tuk-tuk providers and the local authorities allows transport services in the municipality for a fare of GTQ 3.00 (~USD 0.39). Currently, there are 200 tuk-tuks registered (each half of the tuk-tuk fleet operate every other day). Most of the fleet is in poor condition and has already exceeded its life cycle. Public transport is hence operating informally through tuk-tuks providing services similar to that of taxis and no formal stops. Buses only exist in the outskirts of the municipality. Currently, there is no existing transport authority or mobility secretariat in San Juan Comalapa.

The Electric Tricycle Pilot project, which is part of the EUROCLIMA+ programme, seeks to introduce electric transport to boost the renewal of old petrol-powered tuk-tuks and increase the accessibility of public transport.

In Guatemala, there are regulations regarding the importation of electric vehicles, and several incentives to reduce the cost for their implementation are in place. However, most of these incentives apply in only three regions in Guatemala. Two regulations in progress, the Law on Incentives for the Import of Non-Conventional Energy Automobiles, presented in 2018, and the Law on Electromobility, presented in 2019, have not been approved yet.

In the first implementation phase of the municipal pilot project, a total of nine electric tricycles and their charging stations will be implemented. Two units will be used for public transport, four for waste collection, and three for social transport (transport of people with mobility limitations or disabled).

# Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** European Union

**Funding amount:** EUR 500,000

**Implemented by:** GIZ through the Program EUROCLIMA+ Program

**Local counterpart:** Municipality of San Juan Comalapa, Commission for Urbanity, Security and Infrastructure

**Supported activities:**

- Implement two electric tuk-tuks to increase sustainable public transport options for the municipality
- Increase accessibility by implementing three tuk-tuks for people with mobility difficulties
- Provide rubbish collection in areas that are difficult to access by implementing four electric tricycles
- Empower women through their participation in tuk-tuk owners meetings
- Provide technical training on maintenance, operation and management of tuk-tuks

# Status of implementation

**Project start:** 2018 Q3

**Expected project completion:** 2022 Q3

**Completed outputs:**

- Analysis of the current mobility situation, state of the art and market survey
- Procurement of units: launch of tender and procurement of nine electric tuk-tuks

**Next expected outputs**

- Implementation of nine electric tuk-tuks and start of the project test phase

# Core impact indicators baselines

| Indicator | Baseline - 2016 |
|---|---|
| **Total annual transport-related GHG emissions (Mt $CO_2$eq)** | 9,234.15 Kt $CO_2$ eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 0.01191 kg $CO_2$eq / capita |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 36-43 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 19 fatalities<br>/ 100,000 hab (data of 2013) |

# Highlights

## The project integrated a gender perspective to empower women and ensure their participation

The project intends to address the greenhouse and local emissions in San Juan Comalapa coming from the operation of tuk-tuks powered by fossil fuels while empowering women and strengthening their participation in transport services. The inclusion of the gender component in the project seeks to improve the perception of security and safety among women when using the new electric units. The project also aims at increasing the influence of women in the decision-making processes in the city and putting in the spotlight the need of considering gender balance in any policy, programme or project, the definition of its objectives and activities.

## Early interinstitutional coordination and capacity development is crucial for project completion

Interinstitutional coordination needs to be enhanced when implementing this type of project, as many actors are involved, and they are not necessarily trained in mobility projects. Other dependencies of the municipality and the national government had to be involved in earlier stages of the project to obtain required endorsements or approvals. Education, waste collection, and other sectors are linked to the project execution, which adds complexity to its management. Capacities in the management and execution of mobility projects have to be increased to enable the full involvement of some local authorities that might not have sufficient staff or experience.

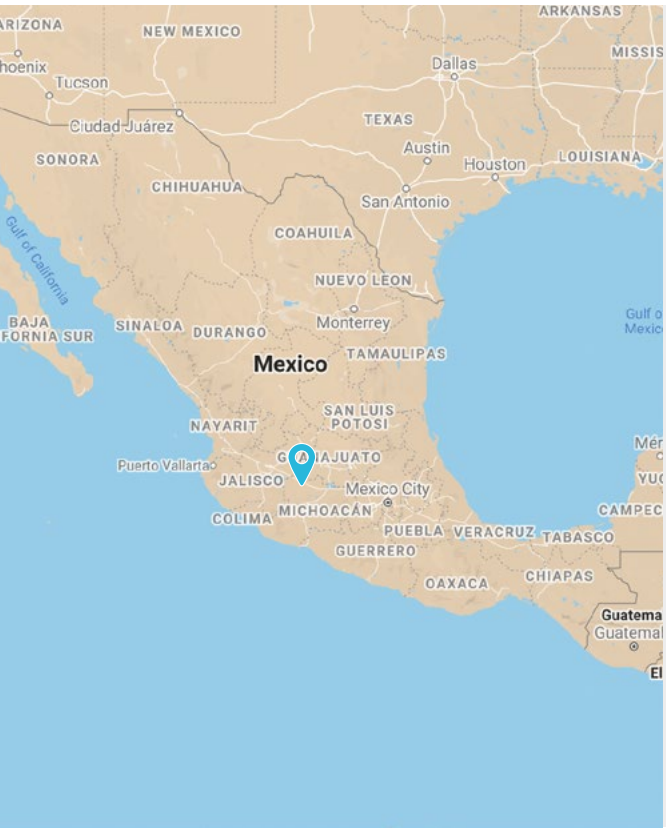
## Legal limitations were an opportunity to support national industry

To overcome regulatory limitations related to the importation of the tuk-tuk units, it was decided to purchase vehicles manufactured in Guatemala, thus supporting the national industry and showcasing the multiple benefits of the project. Although the units are completely produced, some adjustments need to be done and some administrative procedures must be completed to make the units 100% functional.

# Guadalajara, Mexico

Partner country

Status of the project: ongoing technical assistance




## Basic Information

Urban area: 151 km$^2$

Population: 5,243,392 | Growth rate: 1.2%

GDP per capita: USD 7,991

Modal Share

- Formal public transport: 44.24%
- Walking: 26.9%
- Cycling: 2.73%
- Private cars: 15.7%
- Private motorbikes or 2-wheelers: 4.07%
- Taxis: 2.76%
- Moto taxis: 0.89%
- Other: 2.73%

National GHG emissions per capita: 5.39 ($tCO_2eq$)

*Region capital city*

## Context

The Guadalajara Metropolitan Area (GMA) is the third most populated zone in Mexico and it is located in the centre of Jalisco's State with 5.2 million inhabitants. GMA is comprised of nine municipalities. It is an important centre for industries focused on electronics and cybernetics which attracts many young professionals. The main activities in GMA are the manufacturing industry, trading, personal services and maintenance. The Metropolitan Area hosts 75% of the total industry of Jalisco's State.

Currently, the transport system of the Guadalajara Metropolitan Area is comprised of 233 routes of collective buses, two BRT corridors, three LTR lines, four lines of Trolleybuses and the public bicycle system. In 2021, the most recent BRT line comprising 41.5 km launched operations to connect all the peripheric areas of the metropolis, provide service to four municipalities, and connect with the rest of the mass transport network.

The Metropolitan Coordination establishes a management scheme among the municipalities comprising the metropolitan area. This scheme includes the Metropolitan Coordination Board, the nine mayors and the state governor, the Metropolitan Institute of Planning, the Metropolitan Citizen Council and the Metropolitan Planning Advisory Council.

The Metropolitan Planning Institute for the Guadalajara's Metropolitan Area (IMEPLAN), the local counterpart, does not have the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources for infrastructure projects, but it does for other more general types of projects (i.e. technical assistance). Systems and procedures are not in place to monitor, evaluate and report on urban mobility in charge of the counterpart.

IMEPLAN aims to develop and propose metropolitan planning instruments, studies and project proposals, as well as mechanisms to improve the joint efforts of the Metropolitan Coordination Instances. IMEPLAN receives technical assistance to develop a Sustainable Urban Mobility Plan and a pilot project. The objective of this technical assistance is to coordinate and establish a plan for urban mobility for the nine municipalities of the metropolitan area, including various modes of accessible, economic, efficient and safe transport.

The technical assistance contributes to institutional strengthening by capacity development of the local team, facilitating exchanges with cities in Latin America and Europe, and having objective and technical resources for facing the issues on mobility.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP) and Pilot Project

**Funded by:** European Commission

**Funding amount:** EUR 600,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Metropolitan Planning Institute for the Guadalajara's Metropolitan Area (IMEPLAN)

**Supported Activities:**

- Formulation of an Integral Sustainable Urban Mobility Plan for the metropolitan region integrating the nine municipalities, all modes of transport and aligned with the metropolitan land use plan
- A pilot project to implement an innovative methodology for data collection and analysis on urban mobility through digital technology. Data gathered is an input for the SUMP formulation and evaluation
- Capacity building for public institutions to achieve adequate planning processes in urban mobility

# Status of implementation

**Project start:** Q2 2018

**Expected project completion:** Q1 2022

**Completed outputs:**

- Status quo analysis (November 2019 – January 2020)
- Urban cargo logistics (January 2020)
- MobiliseDays (February 2019)
- SUMP Workshop (February 2020)
- SUMP Self-Assessment Workshop (August 2020)
- Development of SUMP strategy – co-creating vision and objectives (April – May 2020)
- Establishment and application of monitoring, reporting and verification (MRV) tools (MobiliseYourCity and Ecologistics) (March-August 2021)
- Update of urban mobility data, integrating non-motorized mobility, freight transport, and public transport (2021)
- Metropolitan Strategy for Emergent Mobility (December 2021)

**Next expected outputs**

- Integrated SUMP for the nine municipalities of Guadalajara's Metropolitan Area
- Pilot Project: Mobile application for obtaining new information on citizen mobility patterns

# Core impact indicators baselines

| Indicator | Baseline - 2016 |
|---|---|
| **Total annual transport-related GHG emissions (Mt $CO_2$eq)** | 6.2 Mt $CO_2$eq |
| **Annual transport related GHG emissions per capita (kg $CO_2$eq)** | 2,994 kg $CO_2$eq / capita |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 3.45 fatalities / 100,000 hab |

# Highlights

## Preparing a SUMP for a metropolitan region creates challenges and complexity – but it also enables providing the citizens with sustainable mobility services that transcend administrative boundaries

Facing metropolitan coordination, the SUMP development required participatory processes and decisions making with many stakeholders, mainly the nine municipalities of the metropolis. Therefore, the SUMP has had to consider nine different realities for mobility planning and an important alignment with other local instruments at different levels: Climate Action Plan, Metropolitan Territorial Plan, Municipal Development Plans.

The sustainability and implementation of the SUMP might depend on the commitment from many authorities in the metropolis. Therefore, the participatory process and involvement level of the set of institutions has been crucial, as well as the alignment with the municipal development plans to enable the implementation beyond the administrative periods and political will.

## The Metropolitan Strategy of Emergent Mobility for the metropolitan area was launched and upcoming work aims at its integration with local development plans

The Metropolitan Area of Guadalajara capitalised on the pandemic crisis and the atypical mobility patterns for envisioning a wider vision of the metropolis, developing the Metropolitan Strategy of Emergent Mobility. This policy document provides nine strategic axes on sustainable urban mobility for the nine municipalities and enables an urban mobility common vision for the future. As a further step, and leveraging the administration transition, the respective development plans of each municipality is expected to be aligned with the strategy.

## Periplo represents the first step for a more dynamic, flexible and low-cost urban mobility planning, but its development requires resources from public institutions

Periplo is the app prepared in the framework of this technical assistance to be used as a practical participatory tool capable of engaging citizens in consolidating better mobility conditions. It is also a powerful instrument to monitor and evaluate sustainable urban mobility public policies in shorter periods by enabling adjustments and strengthening planning processes through dialogue between the government and inhabitants.

Developing this kind of pilot project requires awareness of the risks and opportunities of implementing a digital solution for urban mobility planning. It implies not only innovation but also technical skills (data, transport, software, etc.), infrastructure (hosting), budget (operation and maintenance), and more importantly, human capital to translate raw data into useful information for decision making. Periplo will be made available in 2022 to be used in the Metropolitan Area of Guadalajara. Its main challenge is to reach the minimum number of users to have significant or representative data. The commitment of the authorities and citizens should be aligned to make it possible the digitalisation of urban mobility planning processes.

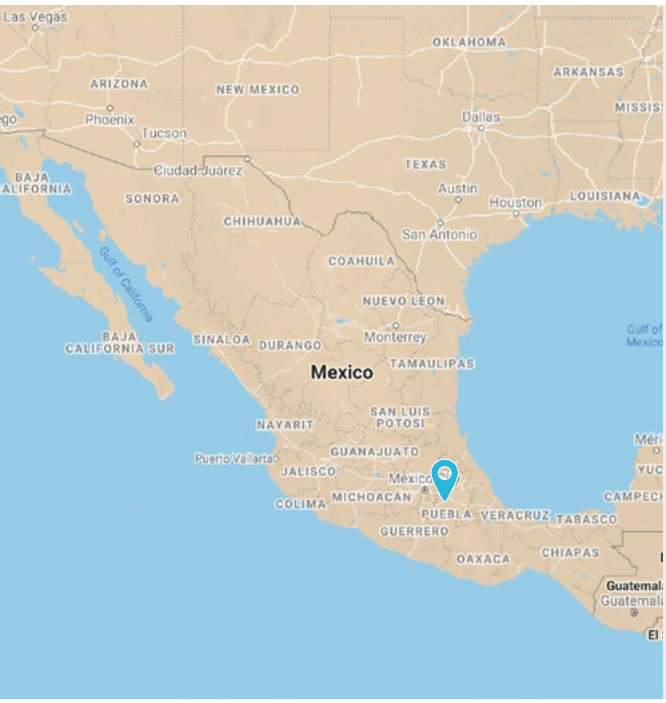
## Digitalising sustainable urban mobility planning is an innovative solution used for the first time in the Latin American context with the potential to be replicated

Periplo is possibly the first case study on digitalisation for urban mobility planning in Latin America, as a first effort to replace traditional origin-destination surveys or complement them. Digital tools such as Periplo might gather daily data and enable monitoring and evaluation of the measures and actions implemented in the short term. Periplo has many opportunities to be improved but it represents an important step towards digitalisation in urban mobility planning.

# Puebla, Mexico

Partner country

Status of the project: **ongoing technical assistance**




## Basic Information

Urban area: **689,87 km²**

Population: **3,250,000** | Growth rate: **1.59%**

GDP per capita: **USD 12,184**

Modal Share

- Formal public transport: **0.7%**
- Private cars: **75.5%**
- Private motorbikes or 2-wheelers: **5.2%**
- Taxis: **1.1%**
- Freight vehicles: **18.2%**

National GHG emissions per capita: **5.39 ($tCO_2eq$)**

*Region capital city*

## Context

Located in the Valley of Puebla also known as the Valley of Cuetlaxcoapan, Puebla has a current population of 3,250,000 people, making it the fourth largest city in Mexico and the fourth largest metropolitan area in Mexico. The territory of Puebla consists of 546 km², with an urbanised area corresponding to 43.1%. In the last four decades, the urban area of the municipality of Puebla has grown by more than 500%, while the urban population barely doubled in the same period. Since 1960, the city of Puebla has become a national reference for important public investments and the attraction of external capital and foreign direct investment. As a consequence, a mono-centric and compact urbanisation process was transformed into an extensive and low-density city, initiating developments further and further away from the city centre near its municipal boundaries.

In 2015, Puebla registered a vehicle fleet of 578,784 motorised vehicles in circulation, of which 75.5% were cars, 1.1% public or private passenger transport, 18.2% freight transport and 5.2% motorbikes. In this sense, for 2015 the motorisation rate of the municipality was 277 vehicles per 1,000 inhabitants. According to statistics, the number of private cars in the municipality of Puebla grew five times more than the municipal population in a period of twenty years (1995-2015), this situation represents a disproportionate increase in private motorised transport that reproduces unsustainable patterns of mobility and urban development.

The city's BRT public transport does not guarantee an intermodal scheme, as there is no integrated system facilitating the transfer from one mode of transport to another.

The local counterpart has the mandate and responsibility to finance public transport infrastructure. It does not have authority to borrow from international finance sources. Systems are partially in place to monitor, evaluate and report on urban mobility.

A large percentage of cyclists come from neighborhoods located in the south of the city, where the Margaritas terminal from Line 2 is located. The pilot project goal is to connect this population with the BRT system, through the installation of safe and accessible bicycle parking spaces at the terminal. It seeks to facilitate conditions for BRT users to use bicycles as a complementary alternative in their travel chain, as well as to encourage active modes of transport over motorized private vehicles. This pilot project is part of the national sustainable urban mobility strategy and the sustainable mobility program of the municipality of Puebla, approved in 2017.

# Support from the Partnership

**Technical Assistance:** Pilot Project development

**Funded by:** European Commission

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the EUROCLIMA+ Program

**Local counterpart:** Secretary of Mobility Puebla

**Supported activities:**

Implementation of the pilot project of the BRT's Margaritas terminal: implementing bicycle parking infrastructure and equipment, new bike lanes, and a potential fee system. The project has three components:

- Technical, financial, environmental and social studies
- Construction monitoring
- Communication and visibility of the project

# Status of implementation

**Expected Project start:** Q2 2021

**Expected project completion:** Q3 2022

**Completed outputs:**

- Participatory process plan
- Report on the results of participatory processes
- Communication and awareness-raising plan
- Diagnostic document

**Next expected outputs:**

- Comparison of solutions
- Preliminary proposal of solutions
- Implementation plan
- Monitoring, reporting and verification (MRV) plan of the project's impacts

# Highlights

## Active modes can provide a better connectivity with mass transit systems through replicable models

Due to the high demand of cyclists in the area of the margarita terminal, it is important that users have intermodal systems that allow them to travel comfortably and safely throughout Puebla. Therefore, the pilot project is expected to encourage the use of bicycles, increase the use of BRT and reduce GHG emissions.

The pilot project can be replicated in other Latin American cities that have a BRT system, as it is a project that allows the connectivity of public transport with other modes of transport, in this case bicycles, a modes of transport that is growing in the region and that reduces GHG emissions.

# Paraguay

Partner country

Status of the project: **ongoing technical assistance**


## Basic Information

Population: **6,960,000** | Growth rate: **3.7% (projection 2022)**

Percent of urban population: **62.9%**

GDP per capita: **USD 4,949 (2020)**

Percentage of the population living below the national poverty lines: **23.5%**

Annual average infrastructure expenditures as percent of GDP: **2.25%**

Nationally Determined Contribution (NDC): **no mobility/ transport related NDC**

National GHG emissions per capita: **1,21 ($tCO_2eq$)(2018)**

Exposure to climate change: **HIGH**

## Context

Paraguay is a landlocked country in South America bordered by Brazil to the east, Argentina to the south and west, and Bolivia to the north. Paraguay has 6.96 million inhabitants; Asunción is the capital and with about 522,000 inhabitants also the largest city in the country. The official languages are Guarani and Spanish. Paraguay has an economy characterized by a large informal sector. Since the beginning of the year 2000, Paraguay has experienced a substantial reduction in poverty and shared prosperity. Paraguay is the fifth largest soybean producer in the world. Since 2014, the Paraguayan economy has grown at an average annual rate of 4% due to strong production and high world prices, at a time when other countries in the region have contracted. The country faces important challenges for the sustainability and expansion of its social achievements. Most of the population in rural areas continues to depend on family farming, which places them at a higher risk of poverty. In the country, there has been a process of migration from rural areas to the country's urban centers in search of greater opportunities for education and employment.

As a state without access to the sea, Paraguay has an important dependency on its transport and logistics infrastructure, which connect it to regional markets and international seaports. River transport is concentrated on the Paraguay River, which is where 60% of the country's foreign trade transits. Paraguay's railway system consisted mainly of a 376 km standard gauge main line that, as of 2006, all rail traffic has been suspended, except for weekly tourist steam trains and short cross-border freight trains with Argentina. Public passenger transport is therefore mainly served by the bus network. The urban transport network is extensive with a relatively good coverage of the population. Cargo transportation is basically covered by trucks, trailers and other diesel fuel consuming modes.

As for the number of the vehicle fleet, data from the National Directorate of the Vehicle Registry shows that the number of vehicles has doubled in less than 5 years to 1,922,682 in 2017. This great growth of the vehicle fleet is related to the increase in GDP per capita, urbanization and population growth. However, Paraguay's vehicle fleet is one of the smallest in Latin America, with a motorization rate of around 2.8 vehicles per 10 inhabitants. Another characteristic aspect of the Paraguayan automotive sector is the used and old vehicles that are part of the automotive fleet. The transportation

sector is by far the largest consumer of petroleum products in Paraguay. sectoral consumption doubled between 2007 and 2017. In relation to the fuel used, about 71% is Diesel. Both gasoline and diesel fuel are required to mix; the first with ethanol and the second with biofuels. Gasoline prices are among the highest in Latin America.

Paraguay is the largest generator of hydroelectric power per capita in the world. Only 20% of electricity generation is destined for internal consumption. Electricity rates are among the lowest in the region. Almost 100% of oil products are imported and associated with high costs. For these reasons, Paraguay has a very high potential for electric mobility. Public transport has a strategic potential to be the spearhead of electric mobility through electric buses. In this context, this project aims to prioritise electric mobility in multimodal urban public transport on the Paraguayan political agenda. The main product of the project will be the consolidation of a Master Plan for Urban, Electric and Multimodal Public Transport that incorporates all actions related to electromobility in the transport sector, including public passengers and cargo transport. The development of the plan will be strengthened by training activities, the involvement of non-state actors, regional exchange, and the identification and management of appropriate financial resources for its implementation.

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Program (NUMP)

**Type of NUMP:** NUMP

**Funded by:** European Commission

**Funding amount:** EUR 300,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Ministerio de Obras Públicas y Comunicaciones – Viceministerio de Transporte (MOPC VMT); Ministerio del Ambiente y Desarrollo Sostenible (MADES)

**Main purpose of the NUMP:**

- Promotion of electric mobility in multimodal urban public transport in Paraguay, to allow reduction of GHG and the achievement of Nationally Determined Contributions (NDCs)
- Prioritization of electric mobility in multimodal urban public transport in the Paraguayan political agenda

**Supported activities:**

- Develop a Master Plan for Urban, Electric and Multimodal Public Transport and a Monitoring, Reporting and Verification (MRV) scheme
- Strengthen public sector capacities for the implementation of electric transport systems and establish regional cooperation
- Involve non-state actors in the implementation of electric transport systems promoted by the Master Plan
- Identify strategic electric mobility pilot projects and potential funding sources

# Status of implementation

**Project start:** Q3 2021

**Expected project completion:** Q4 2022

**Completed outputs:**

- Development and validation of the EC+ project concept
- Pre-study in preparation for the NUMP
- Recruitment of consultancy for the elaboration of the NUMP

**Next expected outputs**

- Master Plan for Urban, Electric and Multimodal Public Transport and Logistics
- Monitoring, Reporting and Verification Scheme (MRV)
- Capacity development and training courses with local counterparts
- Information and awareness campaign on sustainable urban mobility and electrification of transport, including implementation of a website platform
- Roadmap for the implementation of strategic pilot projects

# Arequipa, Peru

Partner country

Status of the project: **ongoing technical assistance**


## Basic Information

Urban area: **3,700,00 km²**

Population: **910,000** | **Growth rate: 1.09%**

GDP per capita: **USD 10,277**

National GHG emissions per capita: **2.82 ($tCO_2eq$)**

Exposure to climate change: **HIGH**

*Region capital city*

## Context

Urban mobility in Arequipa represents an issue highlighted by transport data in 2016, which recorded 52,877 infractions, 5,410 accidents and 128 fatalities and 5,282 non-fatal victims. In 2008, the population clearly preferred to travel by bus, with 63% of all journeys made on an average day, 16.6% of which on foot. By 2017, on the main north-south and south-north axis of the city, which crosses the historic centre, 47% of journeys were made by public transport, 30% by private vehicle and 23% by taxi.

This would indicate a modal choice influenced by:

- The growth of the vehicle fleet without considering the type of service and demand; as of 2016, there are 261,600 vehicles (25% taxis and 46% private cars).
- The low quality of the public transport service, which the user perceives as unsafe conditioned by the 4,000 units of low capacity, poor maintenance, and which are over 20 years old, operating 240 routes.
- The disarticulation of the urban infrastructure with low connectivity between the urban units of the city, road discontinuity and the variation of sections in continuous sectors, aggravated by the superposition of the urban centrality and the historical one.

Arequipa has no mass rapid transit system, but a first light rail system on the main 15 km long NW-SE corridor is planned. Currently, its public transport system relies on non-integrated bus lines. There is an existing transport master plan or similar document (Route regulatory plan 2016).

The Municipality of Arequipa, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It does not have the authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

The objective of this Sustainable Urban Mobility Plan (SUMP) project is to develop a city model that promotes more sustainable modes of travel (walking, cycling, and mass public transport). The main expected results are:

- Improve the urban mobility system and incorporate new technologies reducing travel times, road accidents and implement the Integrated Transportation System
- Reduce the effects of transport on climate change and, as well as the consumption of non-renewable energy
- Improve urban social equity, ensuring universal accessibility while promoting alternative use of the road system and promoting healthier modes
- Develop institutional capacities for the different stakeholders involved in urban mobility issues

The technical assistance provided to Arequipa contributes to institutional strengthening by regulating the sustainable urban mobility management, promoting projects to be executed by the municipality and financing mechanisms for infrastructure, equipment and monitoring system.

# Support from the Partnership

**Technical Assistance:** Sustainable Urban Mobility Plan (SUMP)

**Funded by:** European Union

**Funding amount:** EUR 500,000

**Implemented by:** AFD through the EUROCLIMA+ Programme

**Local counterpart:** Municipality of Arequipa, Municipal Planning Institute (IMPLA)

**Supported activities:**

- Development of the integrated public transport network
- Strategic programmes and projects to optimise the operation of freight transport and urban logistics
- Implementation plan
- Monitoring system

# Status of implementation

**Project start:** November 2020

**Expected project completion:** July 2022

**Completed outputs:**

- Forum on challenges and opportunities for Sustainable Urban Mobility
- Participation plan
- Communication plan
- Expectations survey
- Diagnostic workshop
- Mobility diagnostic

**Next expected outputs**

- Definition of a vision, strategic objectives and construction of scenarios
- Action plan, budget and financing
- Monitoring, reporting and accompaniment to the implementation

# Core impact indicators baselines

| Indicator | Baseline – 2019-2021 |
|---|---|
| **Access to public transport**<br>Proportion of the population living 500 meters or less of a public transport stop | 74% |
| **Air pollution**<br>Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations | 9 µg/m³ of PM2.5 |
| **Road safety**<br>Annual traffic fatalities in the urban area, per 100,000 inhabitants | 0.87 fatalities / 100,000 hab |
| **Affordability of public transport**<br>Percentage of disposable household income spent on public transport for the second quintile household income group | 12% |

# Highlights

SUMP preparation was adapted to COVID-19 context, moving forward the project despite implementation challenges.

Due to COVID 19, the consulting team had to modify the initial methodology (100% face-to-face) to a mixed strategy that allowed them to adapt to the restrictions that varied depending on the peaks of contagion. This strategy also involved holding events with restricted seating capacity, thus increasing the number and timing of activities. The last workshops (Q3 2021) were hybrid concluding that the most important contributions to the SUMP have been gathered from face-to-face events.

Workshops and forums were held between 2020 and 2021, collecting information from the community. The consulting firm also visited the city to collect data on Arequipa's mobility. Based on the information obtained last year, the consulting firm delivered the city's mobility diagnosis and the vision, mission and final scenario for 2022 is expected.

A plan should be made to assess the mobility situation after the COVID-19 crisis, as the pandemic postponed for months the continuity of the project in Arequipa.

# Uruguay

Partner city

Status of the project: **ongoing technical assistance**


## Basic Information

Population: **3,387,605** | Growth rate: **0,35%**

Percent of urban population: **96.1%**

GDP per capita: **USD 17,277**

Percent of population living below the national poverty lines: **8.1%**

Annual average infrastructure expenditures as percent of GDP: **5,9%**

Nationally Determined Contribution (NDC): **Unquantified transport-related NDC**

National GHG emissions per capita: **1.90 ($tCO_2eq$)**

Proportion of transport-related GHG emissions: **41%**

Exposure to climate change: **HIGH**

## Context

Uruguay has a very high urbanisation index, with 95% of its population living in cities and with a sustained trend of migration from the countryside to urban centres. Urban population growth is expressed in an expansion of urban areas towards lower densities. About half of the population lives in the metropolitan area of Montevideo, Uruguay's capital. The rest of the cities are considerably smaller in population, with few counting more than 100,000 inhabitants.

Uruguay has achieved very high rates of access to public services such as water and electricity. However, in many cases, urban growth did not occur in a planned manner. This situation has caused the surge of settlements with little transport infrastructure and collective transport. Hence, transport systems often present different degrees of inefficiency, provoking lower quality and higher costs. Many users had turned towards alternatives such as motorcycles or private vehicles, even in low-income social sectors. Hand in hand with the longest period of economic growth in the country, which has now lasted 15 years, significant growth in the private vehicle fleet took place. Public transport demand has decreased and congestion and air and noise pollution in many cities, especially in Montevideo's metropolitan area, have worsened. On the other hand, as most Uruguayan cities are small, public transport is often not a viable economic option due to scale issues. In such cases, the population must resort to their own vehicles to get around, since public transport systems do not exist. This constitutes a barrier to the mobility of those people that cannot afford a motorcycle or their car.

The public transport sector is highly regulated, with Departmental Governments (GGDD) being responsible for granting public transport services and establishing the requirements for corridors and units (e.g. buses and taxis). Electric mobility has been promoted jointly through the Working Group on Energy Efficiency in Transport, led by the Ministry of Industry, Energy and Mining (MIEM) with the participation of the Ministry of Transport and Public Construction (MTOP), the Ministry of Economy and Finance (MEF), the Ministry of Housing and Territorial Planning (MVOT) and the Ministry of Environment (MA), the national public electricity company (UTE), and the Departmental Government of Montevideo (IM).

There also exist private and social groups working on urban mobility, some from business spheres and others from civil society, such as groups of bicycle users. From the private sector, public passenger transport companies and taxi drivers

actively dialogue with departmental governments and ministries in charge of urban mobility. Business groups have been a fundamental part of the implementation of the first actions to promote electric mobility in Uruguay in recent years. Several stakeholders have participated in communication instances of promotion instruments, training, knowledge of new regulations and standards, spaces for dialogue on advantages and possible barriers of electric mobility implementation.

Transport activities generate more than half of total energy-related GHG emissions in Uruguay. Urban electric mobility has the potential to maximise the benefits of the country's low-carbon electricity matrix. A structural transformation of the transport sector might reduce its carbon footprint and contribute to further co-benefits, such as reducing air and noise pollution. Considering that the GGDD are the leading authority for urban transport, enjoying full autonomy from the national level, policy processes have strong participation through the vertical and horizontal governance structure.

Following the structure proposed by MobiliseYourCity for National Urban Mobility Policies (NUMP), this technical assistance intends to build a holistic perspective of the overall NUMP formulation. The NUMP objective in Uruguay intends to increase access to opportunities located at urban centres through sustainable transport alternatives. From the "ready to implement" approach, the technical assistance supported policy design, implementation instruments (guides), financing mechanism for specific measures, and a capacity-building roadmap. It has also considered strategic planning, exchanging concept designs, facilitation of workshops and meetings. Specific knowledge has been provided on Transport Oriented City-Planning, e-mobility solutions, financing mechanism design.

# Support from the Partnership

**Technical Assistance:** National Urban Mobility Policy or Program (NUMP)

**Type of NUMP:** Policy NUMP

**Funded by:** European Commission

**Funding amount:** EUR 1,000,000

**Implemented by:** GIZ through the EUROCLIMA+ Program

**Local counterpart:** Ministry of Industry, Energy and Mining (MIEM); National Energy Directorate; Climate Change Division of the Ministry of Housing, Territorial Planning and Environment

**Main purpose of the NUMP**

**Objectives:** The project aims to strengthen capacities in the planning of sustainable urban mobility and to lay the foundations for a national program to promote electric urban mobility that includes the development of technical, regulatory, and financial mechanisms.

**Supported activities:**

- Incorporation of e-mobility into territorial planning instruments
- Development of standards and regulations for new technologies
- Development of financial tools to promote and accelerate public and private investment for vehicle fleet electrification
- Capacity building and institutional strengthening for public and private actors to facilitate vehicular electrification

# Status of implementation

**Project start:** 2018 Q2

**Expected project completion:** 2022 Q3

**Completed outputs:**

- National sustainable urban mobility guide
- Participatory process with national and subnational stakeholders
- 5 Cities have been supported to move towards sustainable mobility

**Next expected outputs**

- National Policy document (to be launched in May 2022)
- E-mobility solutions guide (to be done in March 2022)
- Financing Mechanism (to be done in April 2022)
- Capacity building diagnosis and recommendations for a cross-cutting educational system
- Roadmap for the dissemination of policy and its implementation instruments
- Cost estimation of the policy implementation

# Highlights

## Uruguay has set a comprehensive vision to transform urban mobility

Uruguay's NUMP includes a 2050 vision to guarantee people's access to the opportunities offered by urban centres, enabled by environmentally, socially and economically sustainable mobility alternatives. Other components of this vision are strengthening the value of cities as places of encounter, innovation, and development. The ultimate goal of the NUMP is to contribute to improving people's quality of life through four main elements: inclusive access to the city; minimisation of environmental impacts; healthy and safe cities; and diverse and dynamic cities.

## NUMP implementation foresees additional support documents and an adequate governance framework

The particular institutional complexity of Uruguay has required an additional effort in coordination. The NUMP implementation transcends the policy document and entails the creation of a National Commission for Sustainable Mobility (CIMS as its acronym in Spanish), the Sustainable Mobility Planning Guide (available at this link), the E-mobility Guide and a Financing Mechanism, and other actions. A national law will frame Uruguay's NUMP. The CIMS will lead the process to enact the law. After its adoption, the CIMS is expected to lead and coordinate the process for cities to formulate their own Sustainable Urban Mobility Plans. Among other responsibilities, the CIMS will regulate access to funds and coordinate capacity building at the local level.

## Available tools for sustainable urban mobility planning need to be adapted to the local context

Introducing the "ready-to-implement" aspect of the policy required some work time alongside the counterpart to agree on a format tailored for the national regulatory framework. This "ready-to-implement" methodology came late and its inclusion into the ongoing process created some friction. However, the counterpart keeping a holistic perspective was crucial to refining the aspects covered. The early engagement of cities was important to know their specific challenges and needs for future implementation. This consultation process strengthened momentum and commitment from the whole ecosystem of stakeholders. The methodology used is key for success, as it provides enough flexibility to cover all important aspects for sustainable urban mobility planning at the national level while giving room for specific country needs and identity.

## NUMP formulation processes require awareness rising and further capacity development

In general, policies promoting sustainable urban mobility must be accompanied by awareness-raising and capacity development activities. From international cooperation agencies supporting NUMP formulation processes, strategic planning is fundamental for better coordination and dealing with expectations from the local authorities.

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